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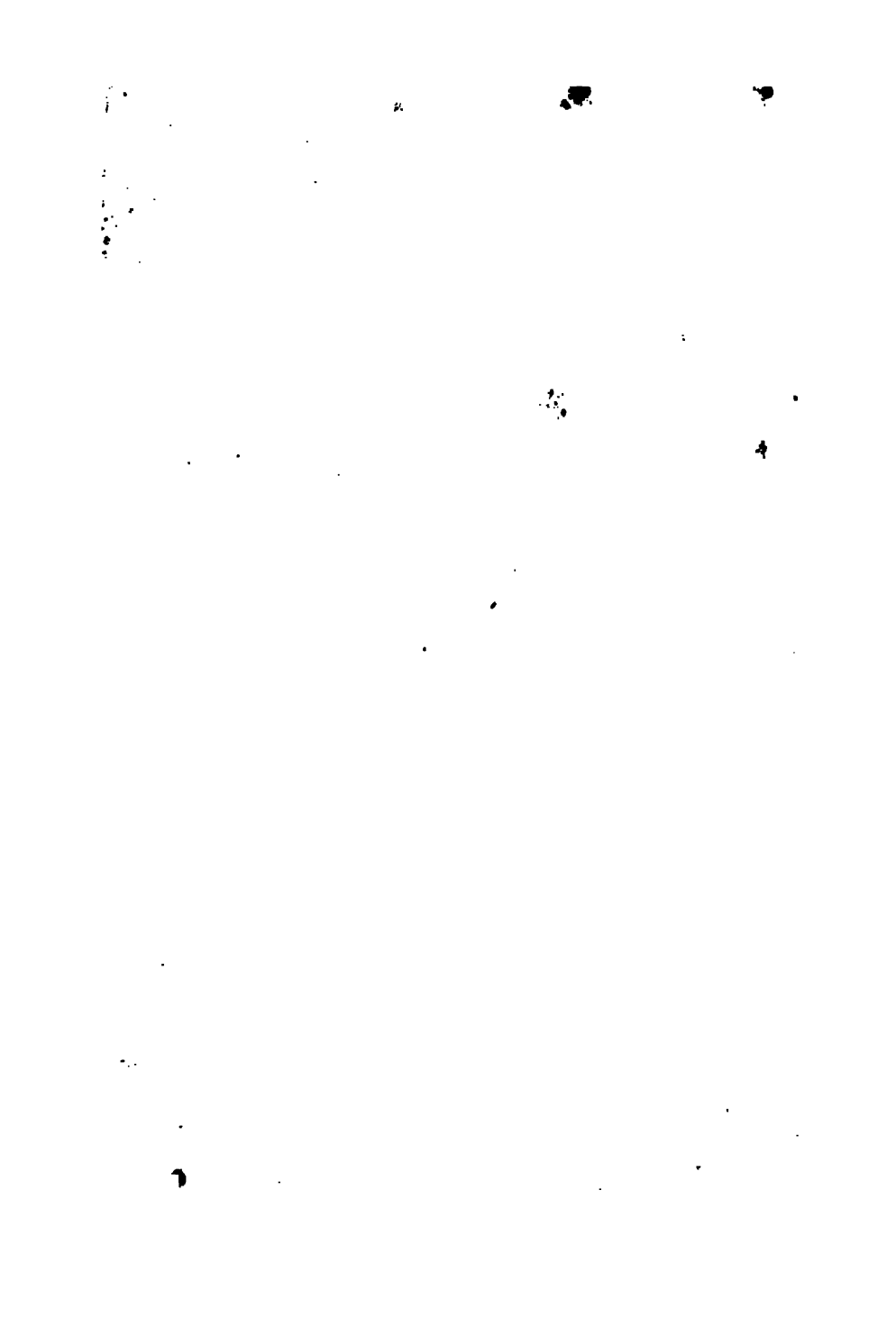
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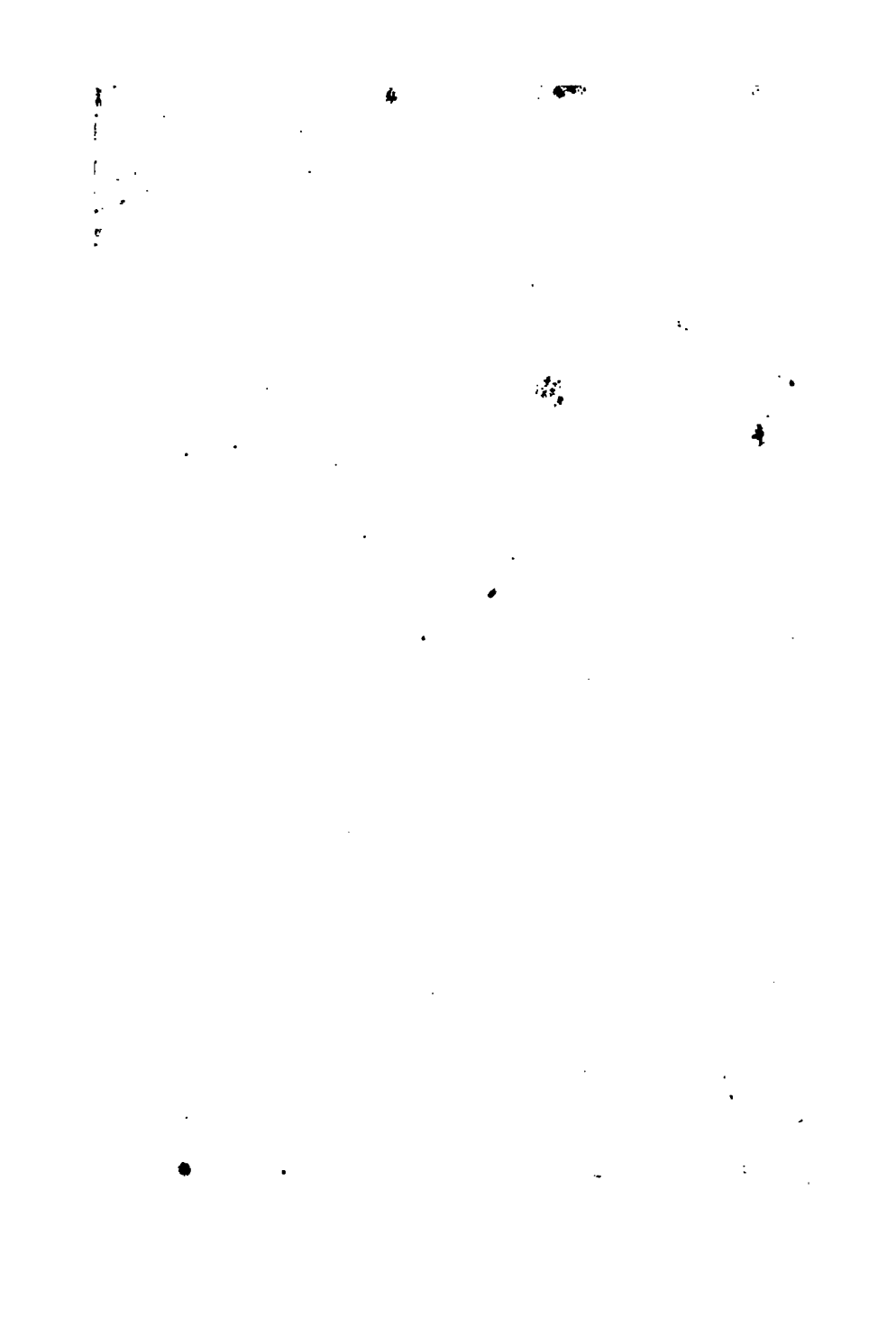


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P R E F A C E.

THE Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of Invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct Inventions, and many of those filed under the new law of 1852 indicate various applications of the single Invention to which the Patent is limited. Considering, therefore, the large number of Inventions and applications of Inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will, from time to time, become apparent, and be supplied in second or supplemental editions.

In addition to Abridgments of Specifications relating to ordinary articles of furniture and upholstery there have been admitted into the present series such as refer to beds and hammocks of all descriptions, and to quilts, but not to blankets or sheets; to billiard tables which are convertible into dining or other tables; to invalid chairs, but not to invalid carriages or bath-chairs, unless they are convertible into chairs or couches; to indoor and Venetian blinds, but not to outside, sunshade, or shutter blinds; to hanging and drawing curtains, and to fabrics for blinds and curtains when made or ornamented specially for them, but not to fabrics equally applicable to other purposes. There have been included also such as describe picture and looking-glass frames, but not the manufacture or silvering of glass; handles and knobs for attachment to cabinet furniture, but not to locks; baths, when combined with articles of furniture; and water-closets, but only when they are portable and serve as commodes. Again, although Specifications concerning reading-desks and stands for holding music and books have been abridged in this series, those which relate to apparatus to be applied to stands or to pianofortes for turning over the leaves of music, &c., have been excluded, and will be found in the volume entitled "Music and Musical Instruments."

The Abridgments marked thus (*) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

June, 1869.

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INTRODUCTION.

IN the earliest ages, when mankind lived in tents and roamed about from place to place, few, if any, articles of furniture were required; the ground, with a skin or mat thereon, was their seat, their table, and their bed. When Abraham "sat in the tent door" in the heat of the day," and when Lot "sat in the gate of "Sodom," they doubtless sat on the ground. Their pillows were of wood or stone, so that it was no hardship for Jacob on his journey to Padan-aram to take stones "and put them for his "pillows." There cannot be a more convincing proof that it was customary to wrap oneself up for the night in the outer garment which was worn during the day than is found in the law of debtor and creditor announced in Exodus xxii. and repeated in Deuteronomy xxiv.; if a man took his neighbour's raiment in pledge he was to return it to him "when the sun goeth down, that he "may sleep in his own raiment."

For articles of furniture therefore search must be made in cities and towns, and one naturally turns to Egypt. Here, while the Israelites were not advanced beyond their lowly seat and bed, the inhabitants were seated on stools, chairs, ottomans, and couches or sofas, had their meals placed on tables, and lay on couches covered with rich stuffs; a proof of the high antiquity of these articles is their constant recurrence in the hieroglyphic writings. Among the Egyptian antiquities in the British Museum may be seen sculptures or drawings of seats from the common three-legged stool to handsome chairs and couches. Sir G. Wilkinson in his work on ancient Egypt writes, "various are "the forms of chairs which occur in the sculptures representing "scenes of domestic life and sacred subjects;" and again, "many "of the fauteuils were of the most elegant form and were made of "ebony and other rare woods covered with rich stuffs and very "like to some now used in Europe, to which indeed they have "frequently served as models."

There is every reason to believe that ordinarily the same article served for a couch by day and a bed by night; bedding of some

kind was placed on the couch, and this sometimes raised it so high that bed-steps were required. In one drawing steps stand beside the couch and a head-rest on it. Several specimens of head-rests are preserved in the British Museum; they consist of a short pillar with a crescent on the top; some are of wood, others of alabaster, and in the same case as the head-rests is a small pillow or cushion stuffed with feathers of water-fowl. The poorer Egyptians slept wrapped in the cloak that they wore during the day. Herodotus (book ii.) writes, that every one who lives round about the marshes has a net which he uses for fishing in the day time and which he throws over his bed at night; for, if he lies down with his cloak or linen only around him, the gnats will bite through such fabrics; but they will not attempt a passage through the net. Mention is made in the writings of Porphyry of a kind of wicker bedstead of palm branches, called *baï* (*baï* is the Coptic for palm branch), and, says Sir G. Wilkinson, "the same species of framework is still employed by the modern Egyptians as a support to the diwans of sitting rooms and to their beds." Bedsteads, however, must have been used in very early times, since we read in Deuteronomy iii. of an iron bedstead belonging to the giant king Og. In the case above mentioned are stools, chairs, and small tables not higher than a chair seat; two of the chairs have a seat of interlaced string or leathern thong, like our cane-bottomed chairs. Among the Assyrian and Egyptian sculptures are many double seats, some of elegant form. The ordinary fashion of the chair legs was in imitation of some wild animal, as a lion or a goat, but more usually the former, the foot being raised and supported on a short pin; and "what is remarkable," adds Sir G. Wilkinson, "the skill of their cabinet makers, even in the early era of Joseph, had already done away with the necessity of uniting the legs with bars. Yanni discovered at Thebes an Egyptian chair in fine preservation, inlaid with ivory and ebony, of very handsome form, and put together entirely with wooden pegs. Footstools constituted part of the furniture of the sitting rooms. The Egyptian tables were round, square, or oblong; the former were generally used during repasts, and consisted of a flat top supported on a single pillar or by the figure of a man intended to represent a captive. Large tables had three or four legs; some were made with solid sides, many were of metal or stone.

The following remarks on the furniture of the Greeks and Romans are extracted from ancient authors, from Smith's

Dictionary of Antiquities, and from Becker's *Charicles* and *Gallus*.

Bedsteads and Bedding.—In the heroic ages of Greece the beds were very simple, a sheep-skin or a shake-down of straw or leaves, and a cloak to wrap round the sleeper. Bedsteads were not unusual in Homer's time; he frequently uses an epithet, *τρύβος*, which must have belonged to a bedstead; the word means *bored* (for the admission of thongs to serve as sacking, or for some similar purpose). In the *Iliad* (book xxiv.) Priam passes a night in the tent of Achilles, who bids his female slaves set the bedstead in the corridor, throw on fair purple rugs, on the top of these spread carpets, and over all thick quilts for upper covering. Again, in the *Odyssey* (book xxiii.) Ulysses relates to Penelope an outline of his manufacture of a bedstead:—he made the legs or props of wild olive and bored them all through with an auger; when he had put the parts together, he decorated them with gold and silver and ivory, and stretched across thongs of ox-hide. The complete bed of a wealthy Greek in later times was composed of (1) a bedstead (with a head-board and sometimes a foot-board also) of maple or box (sometimes solid, sometimes only veneered), or ivory, or wood veneered with tortoise-shell, and having at times silver feet; (2) girths for the support of the mattress; (3) a mattress of wool or other stuffing in a ticking of linen or woollen cloth or leather; (4) a round pillow and sometimes two additional square ones intended to support the back; and (5) rugs, carpets, and bed-covers (called by a variety of names). Notwithstanding the apparent magnificence of the Grecian beds, the Asiatics (so Plutarch informs us) used to say *that the Greeks did not know how to make a bed*: and amidst their splendour they could not always prevent the intrusion of those ubiquitous disturbers of repose, the bugs, since Aristophanes in two of his comedies makes one of his characters allude to them.

Towards the end of the Roman republic, and during the empire, when Asiatic luxuries were imported into Italy, the richness of the beds of the wealthy Romans far surpassed everything we find described in Greece. The bedstead (when furnished) was usually so high that steps were required; it was either of metal or of costly kinds of wood, or of wood veneered with ivory or tortoise-shell; the feet were frequently of silver or even of gold. In a bedstead intended for two occupants the open side at which they entered was called *sponda*, the other, which was protected by a board, *pluteus*. The mattresses and pillows were stuffed with

wool, and in later times with feathers; the rugs and coverlets were of the most costly description, generally of a purple colour, and embroidered with figures in gold.

Canopies and Curtains.—Whether the Greeks and Romans had curtains to their beds is not mentioned anywhere. A canopy was hung over the dinner couches of the Romans, and Horace humorously describes the fall of one at a dinner party, bringing down among the dishes an immense cloud of dust. As it is not always easy to distinguish when their word means bed (in our sense of the word) or the couch on which they lay at meals, it is not improbable that a canopy overhung their beds. In private houses curtains were hung as coverings over doors or served in the interior of the house as substitutes for doors. From Juvenal we learn that window curtains were used in addition to window shutters. Curtains sometimes formed partitions in the rooms, and when drawn aside were kept in place by means of large brooches or buckles. Iron curtain-rods, writes Gell in his *Pompeiana*, have been found extending from pillar to pillar in a building at Herculaneum.

Chairs and Stools.—Of the shape and manufacture of Grecian chairs we have no positive evidence; they must be conjectured from the following epithets applied to them by their poets:—three-footed, lofty, curved, beautiful, splendid, costly, of ebony, well turned or rounded, of beaten gold.

Of Roman chairs in ordinary use for domestic purposes there was a great variety, some remarkably like our modern chairs; many, displaying great taste, have been discovered in excavations or are to be seen represented in ancient frescoes. The frames were of wood, often veneered with ivory or other costly material, or of metal; the legs were elegantly turned and either straight or gracefully curved; the cushions were apparently removeable and tied on with bands. The chairs of the Roman ladies had usually backs, and were richly adorned with cushions and embroidery, which distinguished them from those of the men. Pliny says that the Roman matrons used to sit on sloping chairs made of a kind of willow. Chairs of state, called *curule chairs*, appear from the first to have been ornamented with ivory, and at a later period they were overlaid with gold; in shape they long remained extremely plain, closely resembling a folding camp-stool with crooked legs. The Emperor Aurelian proposed to construct one, in which each leg was to consist of an elephant's tusk entire.

Both Greeks and Romans (as well as Egyptians) had seats long enough for two persons; two such seats of bronze were discovered at Pompeii; they are very handsome in appearance and are without a back.

Couches and Sofas.—The frames of these were similar to those of the bedsteads; some had a back and ends, others were without a back or foot-board, but with an elevated head; in short the shapes were precisely those that are in use at the present day. The epithets applied to couches and to their coverings show that no expense was spared in adorning the visible parts of the frames and the legs, and in obtaining costly coverings for seats and cushions. The earlier Greeks and Romans sat at their meals; afterwards they reclined, and it is not easy to ascertain at what period the change took place; as a rule women and children sat while men reclined. The couches and their arrangement were much the same among the two nations, but ordinarily only two Greeks occupied a couch. Herodotus (book ix.) describes an entertainment given at Thebes to 50 Persians and 50 Thebans; a Persian and a Theban lay on each couch. Probably each couch had its separate table. Among the Romans the dinner couches were set round three sides of a table, and three men usually lay on each couch; hence it was the rule of Varro that the number of guests ought not to be less than that of the Graces, and not to exceed that of the Muses. In some frescoes representing drinking scenes there are long couches with four or five men reclining thereon, and in one four men are reclining on a couch hung with gorgeous tapestry; in front of the couch are three small tables, and between the men three females are sitting with their feet resting on foot-stools. The introduction of semicircular or crescent-shaped tables produced a corresponding couch adapted to hold seven or eight persons. It is equally difficult to ascertain how long this inconvenient fashion lasted. Grecian and Roman manners spread eastward and prevailed in Palestine during the human lifetime of our Saviour. He was doubtless in a reclined position when Mary "stood at his feet behind Him weeping, and "began to wash his feet with tears;" when St. John "was leaning on Jesus' bosom;" and so were his disciples when He washed their feet.

Looking-glasses are of high antiquity; "a molten looking-glass" is found in Job xxxvii.; and in Exodus xxxviii., Bezaleel "made

“ the laver of brass and the foot of it of brass, of the looking-glasses of the women.” They are not mentioned by Homer, even when he details the toilet of Juno. They were at first made of a composition of tin and copper, and the most noted manufactory was at Brundisium ; Plautus however makes one of his female characters talk of a silver one. In Pliny’s time glass mirrors backed with gold were manufactured at Sidon, but they did not come into general use. They were generally small, and such as could be carried in the hand, round or oval, and with a carved or decorated handle. On ancient vases female slaves are seen holding up mirrors to their mistresses when dressing, an office which Ovid informs us was sometimes performed by the lover. Seneca writes that looking-glasses were made of the length of a person’s body ; and Quintilian that Demosthenes practised elocution before a large looking-glass. Claudian describes the chamber of Venus as covered with mirrors, so that whichever way she turned her eyes she could see her image. Under the empire the use of silver mirrors was so common that they began to be used even by maid-servants. Chrysostom, in his seventeenth sermon, says :—“ The maids must be continually importuning the silversmith to know whether their lady’s mirror be yet ready.”

Tables.—The earliest and simplest were round-topped and three-legged ; afterwards, when the shape varied, a fourth leg was required. It does not appear that tables supported on a single pillar were known at Rome until about B.C. 186, when Cn. M. Vulso brought to Rome from Asia among the spoils bed-couches of bronze, side-boards (or cupboards or cabinets) for holding plate and like valuables, and *monopods*. The legs and pillars of the Roman tables were often very tasteful, carved in imitation of lion’s or tiger’s feet, and of ivory ; the tops were of costly woods, maple, cedar, and the African citrus. In some the wood was like the beautiful coat of a panther or tiger ; in others the spots resembled a peacock’s tail, and in others the luxuriant and tangled leaves of the apium ; hence their names *pantherine*, *tigrine*, *pavonine*, and *apiate*. The choicest specimens were those cut near the root, on account of the wood there being most dappled and speckled. Pliny mentions a table-top four and a half feet in diameter and three inches thick. The sums paid by the Romans for some of their tables are almost incredible. Pliny writes of two that cost each 1,000,000 sesterces ; of a pair sold, one for 1,200,000 sesterces, the other

for a little less ; and of one (destroyed in a fire) for which 1,400,000 sesterces had been obtained. Reckoning the sesterce at twopence (a fraction below its value) we have the sums of 8,333*l.* 6*s.* 8*d.*, 10,000*l.*, and 11,666*l.* 13*s.* 4*d.* paid for tables. Well might the Roman ladies, when reproached by their husbands for their extravagant expenditure on pearls, retort and *turn the tables* on them (whence 'tis said the proverb). Under the Roman emperors semicircular tables were introduced.

Tapestry.—Under this head may be included canopies, carpets, bed, couch, and seat covers, hangings, and rugs. Asiatics, Egyptians, and Carthaginians excelled in the manufacture of these, and the choicest came from the looms of Babylon, Tyre, Sidon, Sardes, Miletus, Alexandria, Carthage, and Corinth. They were made chiefly of wool, dyed with bright colours, and interwoven with figures, especially hunting scenes; they were displayed on festivals and other public occasions, and were often conferred as rewards on victors in games and contests. Xenophon mentions the value of a piece which one of his companions gave as a present to Seuthes; it was worth, he says, upwards of 40*l.* Pliny complains that the spoils obtained from the Roman conquests in Asia, from Carthage and Corinth, and the inheritance of the kingdom and property of Attalus, introduced luxury into Italy; and it is after the latter period (B.C. 133) that we read of the fabulous sums paid for articles of furniture. Among the prices given for tapestry intended for dining-rooms are 800,000 sesterces (upwards of 6,600*l.*), and 4,000,000 sesterces (above 33,300*l.*)!

The ordinary furniture of a bed chamber in private life (among the Israelites) may be conjectured from II. Kings iv., 10, "Let us make a little chamber, I pray thee, on the wall; and let us set for him there a bed, and a table, and a stool, and a candlestick." The following description of a wealthy invalid's bed chamber (the invalid is a Greek) is taken from Becker's *Charicles*:—"Before the door hung a costly piece of tapestry, wrought in rich and varied colours, the product of Babylonish industry. The sick man's bed was overhung with a purple Milesian coverlet, from under which peeped the ivory feet. Soft party-coloured pillows supported his back and head; and the hard pavement of the floor was covered, after the Asiatic fashion, with a soft carpet; and the couch, resting on this was thus rendered still more easy and elastic. Close by stood a round table whose three

“ bronze goat feet sustained its maple top. In one corner of the
 “ apartment a magnificent tripod, apparently of Corinthian or
 “ Sicyonian workmanship, held a copper coal pan. Around the
 “ bed were placed chairs of ebony, inlaid skilfully with golden
 “ tendrils, and each provided with a coloured cushion.”

The authorities for the following notices of the furniture of our ancestors are Strutt's manners and customs, and dresses and habits, of the inhabitants of England, Wright's domestic manners in England, Holinshed's Chronicle, and Knight's pictorial history of England, but principally the last named.

Period 1. From B.C. 55 (the time of Cæsar's invasion) to A.D. 449 (the arrival of the Saxons).—Many of the early Britons lived in subterranean caves; but we have Cæsar's testimony that on the south coast there were numerous houses greatly resembling those of the Gauls. Diodorus Siculus calls them wretched cottages, constructed of wood and covered with straw; and Strabo describes those of the Gauls as built of poles and wattled work, in the form of a circle, with lofty, tapering, or pointed roofs; there were neither chimneys nor windows. The only information that we have of the furniture of these hovels is derived from some of the coins of Cunobeline (about B.C. 4), whereon we find the interior of a habitation furnished with seats somewhat resembling modern chairs, stools like the crickets of our peasantry, and others formed from a round block of wood.

Period 2. From A.D. 499 to 1066 (the arrival of the Normans).—William of Malmesbury observes that the houses of the Anglo-Saxons were low and mean, although their way of living was luxurious and extravagant, whereas the Normans, though moderate and even abstemious in their diet, were fond of stately and sumptuous houses. In some Anglo-Saxon houses the walls were hung with silk embroidered with gold or colours; and the needlework, for which the ladies were famous, was displayed thereon to great advantage. The principal room was the hall, and the furniture was very simple, consisting chiefly of benches. Perhaps one end of the hall was raised higher than the rest, as Anglo-Saxon writers mention the *heah-setl* or high seat. The table was exactly what its Anglo-Saxon name implies, a *bord*, which was brought in, placed on supports, covered with a cloth, and taken away when the meal was ended. Serving up the dinner was termed “laying the *bord*,” and from this word we derive our “*board*” (and lodging). In the chamber or bower (as distinguished from the

hall) there were seats and a round or oval table. The customary seat was a *setl* or *stol*; chair is a Norman word. We however find chairs of different forms in illuminated MSS., but they represent the seats of persons of high rank. Chairs, benches, and stools were generally ornamented at the sides or ends with the heads and feet of lions, eagles, or griffins; they were furnished with cushions and carpets or drapery. Footstools were used. Bedsteads were couches with four straight legs and an elevated plank of wood at the head to support a pillow. There is one very singular drawing (in Shaw's specimens of ancient furniture) of an Anglo-Saxon bedstead; it has four posts, which support a tester shaped like the roof of a house; within are curtains twisted round the posts. The words *sæcking* and *lang bolster* occur in Saxon books. In the poem of Beowulf we read that, when the evening came on, the tables were taken away, and the place was spread with beds and bolsters. Some tables must have been made of costly materials, since in the reign of King Edgar one was valued at 300*l*.

Period 3. From 1066 to 1216 (death of John).—Very few additions or improvements were made by the Normans to the stock of English household furniture. We perceive the same description of tables and chairs, but more elaborately carved and ornamented. The hangings of needlework and embroidery seem to have been partially superseded by the fashion of painting on the walls. In an old French romance of the time we are told, "They cause their chambers and great halls to be wainscoted and painted with figures." When we descend from the public to the domestic life of this period, we find the same combination of grandeur and discomfort, a more stately style of architecture, and a certain increase of elegance and comfort, but only a comparative increase; for palaces and castles had no better carpets than a litter of straw or rushes, and often no better beds than a rug laid upon a wooden bench or spread upon the floor. Although the king's table blazed with a profusion of gold and silver plate, it could not furnish the accommodation of a fork, and the luxuries for dinner were laid upon a huge table of plain oak, while princes and lords were seated on each side on clumsy benches. Fitz-Stephen, describing the splendid hospitality of Thomas-à-Becket while Chancellor, writes that he caused his servants to cover the floor of his dining-room with clean straw or hay every morning in winter, and with green branches in summer, that those guests who could not find room at table might sit on the ground without spoiling their fine clothes.

Period 4. From 1216 to 1399 (end of reign of Richard II.).—Painting walls and ceilings almost, if not entirely, superseded hangings of needlework; the *painted chamber* at Westminster obtained its name from its style of decoration. In the reign of Henry II. we read of painted glass windows in domestic buildings; and in the 14th century they were made with lattices to open and shut. Strutt has engraved a beautiful specimen of the chairs of the time of Henry III., and Willemin one of an elegant bedstead, chair, and reading desk of the 14th century. The bedsteads of this period resembled the modern crib used for children, being a sort of long box, the sides or railings of which were called the outer bras; the corner posts sometimes only rose a little above this railing and were surmounted with panels; at other times they supported a tester. The wills of our Sovereigns and our nobility prove that during the 14th century their beds were very magnificent; such phrases occur as a “green bed with his arms thereon;” a “white bed with all the furniture, with the arms of Ferrars and Ufford thereon;” a “large bed of red camora, with his (Edward the Black Prince) arms embroidered at each corner, also embroidered with the arms of Hereford;” a “bed of camora powdered with blue eagles;” a “new bed of red velvet, embroidered with ostrich feathers of silver and heads of leopards of gold, with boughs and leaves issuing out of their mouths,” and “beds of black satin, of blue, red, and white silk, and of black velvet,” all more or less embroidered with gold, silver, and colours. We read also of the introduction of trestles for tables and of fire-screens with feet and stands during the 14th century. Strutt writes, “I have not been able to trace out the first introduction of the luxurious feather beds, but I find them mentioned in an old chronicle as early as the reign of Richard II.; for, speaking of the death of the Duke of Gloucester, uncle to the king, we are told that he was smothered with a ‘feder bedde.’”

Period 5. From 1399 to 1485 (death of Richard III.).—In the 15th century wall painting went out of fashion, and a return was made to the warmer style of decoration by drapery or tapestry, which being fabricated more especially at Arras became generally known by the name of that town. In Shaw's specimens of ancient furniture are some elegant and classically-shaped chairs and stools, a finely carved chair preserved in St. Mary's hall, Coventry, a table, buffets, a reading desk (in Ramsay church, Hants), a chest

or coffer (in Haconby church, Lincolnshire), and a bed. Strutt gives us a most interesting picture of a lady's bedchamber complete of the time of Henry VI. The tapestry soon formed part of the bed furniture; indeed bed and bedding appear to have been the furniture to which most attention was paid, and which was considered a valuable legacy. In 1415 Edward Duke of York names in his will his bed of feathers and leopards, and his green bed embroidered with a compass; and in 1434 Lady Bergavenny bequeaths a bed of gold swans, with tapetter of green tapestry, with branches and flowers of divers colours, six mattresses, six pillows, and cushions "and bancours that longen to the bed afore-said;" a bed of cloth of gold with lebardes, with those cushions and tapettes of my best red worsted that belong to the same bed and bancours, and formez that belong to the same bed, and "a pane of miniver." In the 15th century a bedstead of new construction had come into use, called a truckle or trundle bedstead; it was a smaller bedstead which rolled under the larger one, and was designed for a valet or for the squire when accompanying a knight. In Shakspeare's *Merry Wives of Windsor*, act 4, scene 5; the host says, "There's his chamber, his house, his castle, "his standing bed, and truckle bed."

Period 6. From 1485 to 1603 (death of Elizabeth).—The furniture of the 16th century received a most important addition in the appearance of the looking-glass. Suspended looking-glasses were imported from France; in the privy purse expenses of Henry VIII., in 1532, we meet with "payment to a Frenchman "for certayne looking-glasses;" and at Goodrich Court is a fine specimen of one of the time of Elizabeth, dated 1559. In the works of Shaw, Montfaucon, Willemin, and others, are engravings of round tables with pillar and claw, tables with folding tops, others richly carved, buffets plain and ornamented, and elegant beds. The great bed of Ware is assigned to the time of Elizabeth; and chairs of the same period are yet to be seen in some of the houses of our nobility. In *Twelfth Night*, act 3, scene 2, Sir Toby Belch says, "Though the sheet were big enough "for the bed of Ware." Straight high-backed arm-chairs with the back and seat stuffed and covered with velvet are of the 16th century. Turkey carpets are mentioned early in Edward VI. and are frequently alluded to in the reign of Elizabeth, but they were used more for covering tables than floors. In rooms of state the floor was generally matted, but in others it was still strewn with

rushes. A rich carpet or green cloth was spread before the throne; and from this circumstance knights dubbed upon it at coronations, &c., were called *carpet knights*, as distinguished from those who were made on the field. In Gage's Hengrave mention is made of "a great foulding skreene of seaven foulds, with a skreene cloth upon it of green kersey." Holinshed, whose Chronicle was published in 1577, writes, "There was a great amendment in lodgings, for our fathers and we ourselves have lain full oft upon straw pallets, on rough mats, covered only with a sheet under coverlets of dagswain or hopharlots and a good round log under our heads instead of a bolster or pillow. If it were so that our fathers or the goodman of the house had within seven years of his marriage purchased a mattress or flock bed and thereto a sack of chaff to rest his head upon, he thought himself to be as well lodged as the lord of the town that peradventure lay seldom in a bed of down or whole feathers, so well were they contented. Pillows, said they, were thought meet only for women in childbed. As for servants, if they had any sheet above them it was well, for seldom had they any under their bodies to keep them from the pricking straws that ran oft through the canvas and rased their hardened hides." "In our time if a farmer have not beside a fair garnish of pewter on his cupboard, three or four feather beds, so many coverlets and carpets of tapestry, a silver salt, a bowl for wine, and a dozen of spoons, he thinks his gains very small." Harrison, writing in the reign of Elizabeth, says, "For now the furniture of our houses is grown in manner even to passing delicacie, and herein I do not speak of the nobility and gentry, but even of the lowest sort that have any thing at all to take to. In noblemen's houses may be seen generally abundance of arras, rich hangings of tapestry; in the houses of gentlemen, merchants, and citizens, great provision of tapestry and Turkey work. But as herein all these sorts do far exceed their elders and predecessors, so in times past the costly furniture staid there, whereas now it descended yet lower, even unto the inferior artificers and most farmers, who also have learned to garnish their cupboards with plate, their beds with tapestry and fine hangings, and their tables with carpets and fine naperie." There is given in Strutt an inventory, written early in the reign of Henry VIII., of the goods and chattels of a Mr. Richard Fermers, a gentleman of wealth and distinction; also an inventory of

Henry VIII.'s palace at Hampton Court (including a description of the King's bedstead and bedding); both are well worth the reading.

Period 7, from 1603 to 1660 (restoration of Charles II.).—The furniture of the nobles and gentry during the 17th century reached a degree of splendour scarcely surpassed by that of the present day, and some of the mansions of our nobility contain even now rooms which have remained almost in *statu quo* from the days of the Jameses and Charleses. A tolerably accurate insight into the fittings up of more humble apartments may be obtained from the paintings of the Dutch and Flemish artists of that period, who revelled in *interiors*. In a list of articles of furniture supplied on the occasion of the marriage of the Princess Elizabeth, daughter of James I., are found a suit of hangings embroidered with cloth of gold and silver, a bed of crimson velvet, double valance and curtains of silk and satin, chair, stools and cushions richly garnished all over with cloth of gold and silver, cupboard cloths, carpets, screen cloths, window curtains and copper rings, bolsters, pillows filled with down, quilts, blankets, and counterpoints, little tables, and a folding table of walnut tree. Paper and leather hangings were invented early in the 17th century, and the walls of the wealthier classes were enriched with paintings in gorgeous frames. Turkey and Persian carpets covered the tables of even the middle class, floors being still matted or strewn with rushes.

The following extracts from a letter written by Lady Compton to her husband (afterwards Earl of Northampton), in the reign of James I., will give an idea of what some titled ladies expected in those days :—" I pray and beseech you to grant to me, your most kind and loving wife, the sum of 2,600*l.* quarterly to be paid. " Also I would, besides that allowance, have 600*l.*, quarterly to be paid, for the performance of charitable works." " Also I will have three horses for my own saddle." " Also I would have two gentlewomen." " I must and will have for either of them a horse. Also I will have six or eight gentlemen; and I will have my two coaches, one lined with velvet to myself, with four very fair horses, and a coach for my women, lined with cloth, and laced with gold, otherwise with scarlet and laced with silver, with four good horses. Also I will have two coachmen." " Also at any time when I travel, I will be allowed not only caroches and spare horses for me and my women, but

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“ perhaps as good as at present, and the woods employed were
“ almost the same, but in all the higher qualities which go to
“ make a piece of cabinet work not only durable and suitable for
“ the work it has to do, but beautiful in its proportions and
“ decorations, our work was at that time lamentably deficient.”
He feels that the exhibitions since 1851, and especially the permanent one at South Kensington, have much improved the workman’s taste, and after commenting on some of the choicest specimens of furniture in the Paris Exposition, he thus concludes:—
“ To compare the English work with the French would show us
“ still far behind our neighbours; but we may look with pride at
“ our department (spare as it is) and be well satisfied with the
“ progress cabinet work has made since the memorable year
“ 1851.”

Mr. C. A. Hooper writes that the French “ have a wonderful
“ display of cabinets,” and “ these show wonderful skill both in
“ art design and workmanship, with such exquisite carving that
“ here they unquestionably are our masters.” “ Here I must
“ notice the contrast of the light, easy, graceful style of French
“ furniture with much of the massive, clumsy, unmoveable furniture
“ manufactured in London. I have had some experience
“ in fitting and fixing cornices, draperies, and curtains. In this
“ also the French workman’s skill and artistic taste are remarkable, while we show our great deficiencies from the want of an
“ art-education.”

Mr. T. Paterson writes, “ from a rather close comparison of the
“ English and French portions I am inclined to think that the
“ English workmen are at present superior to the French in
“ workmanship, and that the French are superior in matters of
“ taste, in knowledge of art, and in the number of workmen
“ who can produce artistic work.”

FURNITURE AND UPHOLSTERY.

A.D. 1620, July 5.—N^o 16.

DICKSON, JOHN.—“A certaine commodious instrument called
“ a backstall, back frame, or back skreene, for the ease and releife
“ of such sick persons and others as are or shalbe distempered or
“ troubled with heate of their backs through continuall keeping
“ or lyeing on their beddes.”

[No Specification enrolled. Letters Patent printed, price 4*d*.]

A.D. 1638, July 17.—N^o 118.

HUNT, CHRISTOPHER.—“Ymbrodering or huffing of guilded
“ leather vpon severall ground^e fitt for hanging^e, or other furni-
“ ture for houses, whereby many of our poore subject^e nowe
“ wanting meanes may have ymployment and releife.”

[No Specification enrolled. Letters Patent printed, 4*d*.]

A.D. 1638, December 10.—N^o 121.

BILLINGSLEY, WILLIAM.—“A way of printing, or stanching,
“ whereby cabbinett^e, bedsteed^e, playing tables, voyders, picture
“ frames, banquetting tables, and such thing^e are wrought with
“ much facility, both beneficiall and duresable.”

[No Specification enrolled. Letters Patent printed, 4*d*.]

A.D. 1692, April 22.—N^o 296. (* *)

BAYLY, WILLIAM. — Makeing of a new sort of glazed printed
“ hangings made of cotton, worsted, or woollen yarne, of all sorts
“ of curious figures and landskips, which for beauty of colours,
“ exactnesse of figures, strength, and glosse is hard to be distin-
“ guished from the finest silk tapestry hangings brought hither
“ from forreigne parts.”

[No Specification enrolled. Letters Patent printed, 4*d*.]

A.D. 1760, May 14.—N^o 750.

KNIGHT, GOWIN.—“New invented machine window blinds.” These blinds consist “of several leaves or vanes, of the figure of “a parallelogram;” they turn “each upon a separate axis,” and are so contrived that they move altogether and “point the same “way.” The blinds are made of various materials.

[Printed, 4d. No Drawings.]

A.D. 1766, September 13.—N^o 860. (* *)

DICKINSON, ROBERT, and SEDGIER, HENRY.—“A bedstead “which is of a quite different construction to any thitherto made, “and would be of great use and conveniency to such of his said “Majesty’s subjects as should be so unfortunate to be confined “to their beds by sickness.” This consists first of a part “to “which is fixed a false headboard by two, three, or more hinges, “that falls back as it is forced or raised up to heighten the back “of the settee, and again into its place when it is let down to form “the bedstead, is fastened by two strong hinges to the second “part (which is screwed down to the sides of the bedstead, and is “forced or raised up by two quadrangles, with teeth cut out of a “solid bar of iron that runs across the bedstead and is received “into a box consisting of two plates of iron screwed together, “separated by two shoulders the thickness of the quadrangle, “through which it passes into the sides of the bedstead, where “it dies and receives a winch on one or either side, to force or “wind it up and let it down by, with a stop on each or either “side to fix it to the height the person in bed chooses to be “raised. The second part is entirely fixed to or upon the sides “of the bed” by “four or any other proper number of screws, to “which is added and fastened by two, three, or more strong “hinges, the other or third part of the bottom, falling within the “sides of the before-mentioned bedstead in order to form the seat “(to which on each side is fastened a spring ketch that lets into “the sides of the bedstead by forcing it with your hand, and “fastens it compleatly when raised up to form the bed), to which “is nailed, screwed, glued, or fastened, a sacking, which goes or “is received over a roller that is fixed within the foot rail of the “bedstead into feet-posts or pillars by two iron gudgeons drove “into the roller and fixed in by two ferols, which are received

“ through two plates of iron into the posts or pillars aforesaid,
 “ and is fixed unto another roller on to which it is wound, that is
 “ fixed unto the sides of the bedstead by two gudgeons, fastened
 “ as per description of the first roller, only the gudgeons, which
 “ goes into the sides of the bed, are longer than the gudgeons of
 “ the first, and are square or of a triangle form, and go through
 “ iron plates in order to receive the wynch which winds it up, to
 “ which is fastened or fixed at either or each end a round plate of
 “ iron adjoining to the ferol, cut full of teeth, commonly called a
 “ burhead, which, when the lower part comes to be wound up,
 “ fastens and stays it by a key or catch that is fastened to the
 “ sides or side of the bed, and falling into the teeth. There is
 “ fixed to the first part before described, to be raised by the quad-
 “ rangle in or on each side of it, two iron screw staples with eyelot
 “ holes, that receives two hooks fastened to a close elbow or elbows
 “ that has a tennant which is received into a mortass in the second
 “ part, which is stuff'd and covered; the furniture, bed, matrass,
 “ and bedding compleating the settee.”

[Printed, 4d. No Drawings. Rolls Chapel Reports, 6th Report, p. 188.]

A.D. 1768, January 2.—N^o 891.

LAYCOCK, THOMAS.—“ A new kind of window blinds for
 “ coaches and other carriages, which will exclude sun and rain,
 “ and admit of a free current of air.” The blinds are constructed
 “ to slide down the groove, and to answer at once the purposes
 “ of shutter and curtain.” The shades of wood or metal “form
 “ a close pannell in the frame,” each lath turning on a pin and
 “ fixed thereby in the frame. At one end or side is a spring bolt
 “ or latch “to keep the blind close or in different degrees of ele-
 “ vation;” another spring bolt or latch keeps “the shades close
 “ down as a pannell,” and another spring latch with a tooth rack
 “ keeps “the shades in different degrees of elevation.” The same
 “ objects may be effected by means of a button and a hook.

[Printed, 4d. No Drawings.]

A.D. 1769, March 7.—N^o 920.

PICKERING, JOHN.—“ A new method of performing that kind
 “ of work commonly called chasing, for the working in gold, silver,
 “ brass, tin, and other metals of various things, particularly coffin
 “ furniture, ornaments for coaches, chariots, sedans, and other

“carriages, for cabinet work and other domestick furniture.” The following is the brief description of his invention given by the patentee:—“The various kinds of work are performed by
 “different machines, each respectively adapted to the dimensions
 “of the piece in hand, but being of the same kind and consisting
 “of an oblong square frame with two rods, in which an iron
 “moving forcer, or weight, or hammer, faced with a softer metal
 “the better to assist the impression, is worked by the assistance
 “of three wheels upon a striking block, with a die fixed thereon
 “formed for each respective purpose.”

[Printed, 4*l*. No Drawings.]

A.D. 1769, December 11.—N^o 945.

BEVAN, EDWARD.—“A new constructed Venetian window
 “blind.” The patentee thus briefly describes his invention:—
 “A brass wheel is to be fixed in a frame so as not to admit of a
 “line getting or slipping out, and then fixed into a lath thicker
 “than the others in order to conceal the same, and likewise
 “opposite to the tapes that draw up and fall down, by which
 “means it causes a different shade, and deceives the eye from
 “observing the working of the pullies.”

[Printed, 4*l*. No Drawings. See Rolls Chapel Reports, 6th Report, p. 137.]

A.D. 1771, July 29.—N^o 995.

ECKHARDT, ANTHONY GEORGE.—“A new portable table,
 “with double or single folding flaps and folding feet, and also a
 “new portable chair, so contrived as to answer all the purposes
 “of the common tables and chairs, and at the same time to lay
 “in the compass of a small box.” The table is composed of a
 square folding frame having “two joints in the direct middle of
 “each side,” and “one joint at the insertion of each of the four
 “leggs,” and two flaps hung on hinges and “so contrived that
 “they may hang down at right angles to the frame when it is
 “first opened, and be capable of turning in such manner as to
 “bring them to fold over and meet in the center of the frame
 “which is their support, and to which they are fastened by two
 “snap locks.” The legs fold inwards by means of a hinge on
 each, and a bolt contained in the upper joint falls by its own
 weight, when the table is opened, into the lower joint to give the
 necessary steadiness and strength. The stool or chair is similar

in construction, except that only one flap is required which forms the seat. "Little drawers or boxes may be made to fold up " therewith to hold pens, ink, paper, and small instruments of " any sort."

[Printed, 8d. Drawing.]

A.D. 1772, February 1.—N^o 1002.

GALE, THOMAS. — A "new-invented bedstead," which, when shut up, presents the appearance of a bookcase or wardrobe. The part forming "the tester, rod, and curtain," is raised and lowered by turning a handle (on one side of the frame), which actuates a pinion, wheel, and cog. The cog acts on a rack furnished at the ends with rollers, which slide in the brass groove of a spindle. The rack works a bracket which supports the tester.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th Report, p. 138.]

A.D. 1772, November 20.—N^o 1027. (* *)

CLAY, HENRY. — "Making in paper high varnished pannels or " roofs for coaches, and all sorts of wheel carriages and sedan " chairs, pannels for rooms, doors, and cabbins of ships, cabinets, " book-cases, screens, chimney-pieces, tables, tea-trays, and " waiters," "by pasting several papers upon boards or plates of " regular thicknesses on each side the same" until the thickness required is attained; the edges are cut off or planed "until the " board or plate appears," and the papers taken off such boards or plates are screwed or fastened on boards or plates, and are rendered inflexible by drying in a hot stove, while at the same time they are rubbed with or dipped in oil or varnish, which "drenches into them," and secures them from damp, &c. The papers so made are worked in every respect like wood, and into articles such as tea-trays and dressing-boxes. The articles may be "coated with colour and oils sufficient to make the surface even, "and are then japanned and high varnished."

[Printed, 4d. No Drawings. See Rolls Chapel Reports (sixth), p. 161.]

A.D. 1774, February 14.—N^o 1065. (* *)

JACOB, JOSEPH, the younger. — "A method of ornamenting " carriages, sedan chairs, buildings, furniture, musical instru- " ments, books, and toys."

The Specification describes the invention as consisting "in painting, gilding, japanning, lacquering, high varnishing, engine cutting, stamping, printing, engraving, inlaying and piercing the metals commonly called tin foil, lead, and pewter, beat or roll'd out into thin sheets and fixed on to the parts of the aforesaid subjects designed to be ornamented . . ."

Plans in the margin of the Specification show the invention as applied to a "coach boot or budget."

[Printed, 4d. Woodcut.]

A.D. 1774, April 14.—N° 1068.

STORER, WILLIAM.—"Making, chasing, or imbossing in lead all sorts of girandoles, frames for pier glasses, tablets, freizes, and brackets for chimney pieces and rooms, and of hardening the same so that such ornaments are rendered as durable as if made in copper or other metals." Lead "of the softest and purest quality" is melted in an iron pot, when a quantity of resin and tallow in equal proportions is poured over it sufficient to keep a blaze on the metal about fifteen minutes, keeping it stirring all the time." The mould is made of "clay and red lead," well braided together with weak glue size, and of about the consistence of "glaziers' putty," so that "when applied and pressed to the model" it will take a fine impression. Such parts of the casting as appear too flat are chased and embossed to the full relief of the boldest and richest carving in wood," and the back is trimmed all over with hard solder. To make the articles fit to receive gilding or painting they are washed over about eight or ten times with a size composed of gum lac, parchment, and red lead.

[Printed, 4d. No Drawings.]

A.D. 1774, November 11.—N° 1086.

CAMPBELL, ROBERT.—"Library steps to be contained in writing tables, library tables, and dining tables, with or without handrails, and with or without desks on the top, and also in card tables, breakfast tables, and lady's dressing tables, or in any other tables, and in chairs or stools." The steps are contained in the frame of the table, or pull in and out of it as a drawer; in the former arrangement, the table top opens like the lid of a box, sideways or endways; they are made in two parts,

either hinged together, or with "the lower flight hinged to a slide that goes into the frame like a drawer." A handrail and a desk may be attached to the upper flight, which is supported by "a back foot," or by having the upmost step secured to the table top by an iron hasp. By a very similar method, the patentee introduces steps into the frames of the seats of chairs and stools.

[Printed, &c. Drawing.]

A.D. 1776, December 24.—N^o 1142.

LEWIS, ISRAEL.—"Method of making window curtains with springs, by which means they may be fixed up and taken down without the assistance of an upholsterer, not only with great expedition, but with much less damage to the wainscot or wall; and they are so contrived that the curtains may with great ease be put up or taken down by any servant in the family in less than a minute's time."

[No Specification enrolled.]

A.D. 1777, August 1.—N^o 1164.

SMALL, JAMES.—"A very particular kind of window lath, to which the curtains are fastened with the greatest ease and expedition, and may also be applied to bed furniture to the greatest advantage, and so simple and easy that they may be taken down and put up by any servant of the least experience, and without the least damage to the furniture, as no nail or instrument whatever are used, and is so contrived that the lines and tassells are fixed to the curtains." The invention is described as follows:—"The window or bed curtain lath may be made streight or shaped at pleasure, of wood, metal, or any substance whatever of sufficient strength to support the weight of the curtain. The curtain is to be fixed to the lath either by slips of wood pushed into a bag, sewed to the heads of the curtain, in the same manner as the base slip of a bed is done, either by a groove in or hooks, &c., to fix the slip to the lath, or laced on by oilet holes made in a strap, &c., sewed to the head of the curtain, drawn over studs, staples, or through holes made in the lath, or the window or bed curtain may be fixed to the lath by hooks sewed to the head of the curtain to hook upon the lath by holes, &c., made in the lath or staples drove in the architrave of the window or wainscot, &c. (where a lath may not be convenient) to receive

" the hooks fixed to the head of the curtain. The lines which
 " draw up or let down the said curtain may run over rollers or
 " pulleys made of wood, metal, or any hard body fixed to lay on
 " or hang to the said lath, and left fixed to the lath or curtain,
 " as it best answers the plan of the building, and the shape of
 " the window or bed lath. Where it is thought most convenient
 " the window curtain and lath may be let down by lines over
 " pulleys from a fixed lath at the top of the curtain (when up)
 " to a proper height, to be taken off or put on by a person
 " standing on the room floor."

[Printed, &c. No Drawings.]

A.D. 1777, August 1.—N^o 1165.

MARSTON, JOHN, and BELLAMY, SAMUEL.—"A method of
 " stamping upon plated metal, gilt, and other metals, all sorts of
 " hat and cloak pins, and all kinds of figures, decorations, orna-
 " ments, and other devices for cabinet furniture and lock furniture,
 " and intermixing divers colours in the same." A bar of copper
 or other metal (with or without silver plated thereon) is rolled
 thin and cut "into such sizes as the design requires;" the pieces
 are to be annealed (?), boiled in alum and water, and afterwards
 burnished. They are then pressed into ground and polished dies,
 and the hollow of each, after being washed with sal ammoniac
 and water, is filled with a composition of "bar tin, grain tin,
 " regulus, and lead, melted down together." Or a thin plate of
 metal may be introduced, "and the outside metal turned over
 " such plate." Before filling the hollow there must be placed in
 the middle of it "a shank nail or screw," which will be secured
 to the article by the composition, or "in case a plate is put in the
 " hollow, the shank nail or screw should be bored up to the
 " head through the middle of the plate," and it should be
 fastened to the plate "with the above composition or Bath metal."
 The articles are to be made hot and brushed over with "spirits
 " of wine and gum sandarak mixed together;" such as are
 neither gilt nor plated "may be coloured with a lacker made of
 " spirits of wine, seed lake, and ornatto, mixed together." To
 intermix divers colours parts of the articles are pressed out, a
 seal is put under, and the parts are filled up, or paint may be
 laid on.

[Printed, &c. No Drawings. See Rolls Chapel Reports, 6th Report, p. 163.]

A.D. 1781, March 28.—N° 1287. (* *)

PARKER, WILLIAM.—“A method of making pedestals or supporters for candlesticks, girandoles, chandeliers, candelabrams, lamps, candle shades, epargns, clocks, watches, terms, tripods, vases, urns, busts, and figures, of various materials, and variously ornamented, which would be of great public utility,” as follows:—“a base, a die, a cornice or capital, with an ornament on the top thereof of various forms; some of the pedestals stand on feet of various forms, and some without feet, and the whole are composed of metals, wood, crystal, or coloured glass, ornamented with metals, enamels, paintings, varnishings, or engravings, and a screw goes through the whole capital to fasten it together.”

[Printed, 4d. No Drawings. Rolls Chapel Reports, 6th Report, p. 141.]

A.D. 1782, August 1.—N° 1336. (* *)

CREASE, JAMES.—“A pot or pan to be applied to a night stool, or necessary or other purposes, which would prevent offensive smells, and be of public utility.” The vessel is made of metal, glass, or earthenware, it has a groove or channel either fixed round on the brim, or in the inside or outside, near or at a distance below the rim. The groove contains water or other fluid, and the lid drops into it.

[Printed, 4d. No Drawings. Rolls Chapel Reports, 6th Report, p. 142.]

A.D. 1783, May 17.—N° 1372. (* *)

RIZ, DAVID.—“A machine or apparatus on a new construction and principle, applicable to water-closets, night tables, or chairs.”

The machines “are made cylindrical and conical, and divided into several partitions or cisterns, and stand vertical or horizontal under the seat of water closet, night table, or chair. Those that stand vertical have their partitions or cisterns at the side or circumference, and turn in another cylinder, and are air and water tight, having their proper openings for inlet and outlet. Those that lay horizontal have their partitions or cisterns at top, turning under a cover, and have also a moveable or fixed bottom, according to the place it is to be used and applied, and are also air and water tight, with their proper inlets and and

“outlet. Each partition, division, or cistern of those that lay
 “horizontal when made use of is turned under the cover, and those
 “that stand vertical is turned off to another part of the outward
 “cylinder. Another mode of making this apparatus for smaller
 “water-chairs, closets, &c., is that of having one cone to work
 “in another. The outward cone is fixed in the center of a
 “cylinder or other figured vessel, which have separate divisions
 “or cisterns, all of them air and water tight. At the lower part
 “of the inner cone is one opening or outlet, which have a move-
 “able cover or stop. The outward or fixt cone has as many
 “openings as there are divisions or cisterns in the cylindrical or
 “other figured vessel used, one other of which is always opposite
 “to the opening of the inner cone; and when made use of the
 “contents will naturally drop into such divisions or cisterns when
 “its cover or stop is removed, and by turning round the said
 “cylinder or other figured vessel the outward cone is fixed to, the
 “offensive part is removed away, and a clean cistern brought
 “opposite to the opening of the inner cone by machinery annexed
 “to each of the above-described apparatus, composed either of
 “wheels, racks, levers, springs, chains, pinions, valves, or sliders,
 “... and the whole so constructed as to prevent any offensive
 “smell or vapour transpiring, they admitting of water being
 “poured into each cistern or partition, or conveyed therein by
 “pipes, or by hydrastatick means and machenery, either annexed
 “or detached from it; and the primary motion given them is
 “either by means of lifting and shutting the cover of such
 “watercloset, night-tables, &c., or by pulling of leavers, wheels,
 “racks, or springs, as may be most convenient, whereby the same
 “effect is produced.”

[Printed, 4d. No Drawings.]

A.D. 1785, June 4.—N^o 1483.

WALDRON, THOMAS.—“New-invented art of making bed-
 “steads, by putting them together without screws and nutts, and
 “effectually preventing vermin from harbouring in them.” The
 “rails and the posts are united by pieces of metal at the ends of the
 “former, which slide into suitably shaped pieces of the same metal,
 “fixed on the inner sides of the latter. The curtain rod is secured
 “to a folding tester lath, by passing “two oblong tenons, the ends
 “of which move round a center,” through mortises cut in the

foot of the tester, and then turning them round. There are metal sockets along the edges of the sides and foot of the tester, and metal pins "with a plate on the top to fix to fascias, which by "going down the sockets in the tester lath support them." A piece of wood, lined with metal upon the edge, "is fixed to the "inside of each head post to receive and confine the bottom edge "of the head board, the top edge being confined by bolts at each "end to shoot into the same side of the posts. The edges of the "lath bottom, the rebates that support it, and each end of the "head board is lined with brass." Press bedsteads are constructed on the same principle, brasswork for the ends to slide on and connect them together, and tenons and mortises being substituted for screws and nuts, and every connecting part being lined with metal, to prevent bugs, &c. from harbouring therein.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th Report, p. 171.]

A.D. 1786, November 7.—N° 1568.

ROGERS, THOMAS.—"A new method of ornamenting chimney-pieces, looking-glasses, pictures, frames, and all other kind of "furniture, with carved or moulded glass in relief, plain or "coloured, and may be applied to many other useful and ornamental purposes." The ornaments, which are cut or carved out of glass "either coloured or uncoloured in the making or staining," are made to represent "flowers, leaves, &c., in their natural colours." "I also," says the patentee, "cut, carve, mould, "and quick them, after the glasses are made in the form of "flowers, leaves, husks, scrowles, urns, drapery, mouldings, &c., "with instruments commonly used by glass cutters, engravers, "seal cutters, or any other instruments that will answer the "purpose. I lay these ornaments on my design, which may be "composed of wood, glass, metal, earthenware, or any other body "by the help of any cement or composition sufficiently strong."

[Printed, 4d. No Drawings.]

A.D. 1786, December 19.—N° 1579.

CAIRNCROSS, WILLIAM.—"A method of securing and rendering strong and permanent the tenants or joints between the "legs and rails of chairs and tables, &c. in cabinet work, by "means of screws made of iron, brass, or any other metal or

"mixed metals, and internally applied without being seen or discernable on the outside of any work whereon or whereunto the said method is applicable." The patentee employs to carry out his invention two kinds of screws or bolts; one "for all sorts of square and bevil'd angles to be tightened with screwed nuts," the other, "a circular bolt, which will answer for all work of that kind." The former is made in two parts, capable of being screwed or otherwise fastened together at or nearly at a right angle; the outer end of each part is cut with a screw thread, and provided with a nut. The latter is cut with a screw thread at each end, and also provided with nuts.

[Printed, 6d. Drawing.]

A.D. 1792, February 11.—N^o 1850.

HIGGS, JOSEPH.—"A bedstead on a new construction." The frame of this bedstead is intended for either sacking or laths; on the inner side are screws with eyes or hooks through which the cord passes for connecting the sacking. If laths are used, they are provided at their ends with hooks which drop into the eyes. Two bearers parallel to the side rails support the laths; along the middle of the bearers is let in a projecting rib of metal on which the laths rest. The end rails of large frames have a joint in the middle, so that they can be folded up if required. The posts and legs are attached by being screwed to the frame separately, or by means of only one screw and nut for each post and leg, or by means of "a key pin and staple." The headboard is joined to the post by hooks and eyes. The ends of the tester laths are of metal or covered with thin metal plates. The pins on the top of the posts "must be made with a shoulder to prevent the tester laths from resting on the top of the posts."

[Printed, 8d. Drawing.]

A.D. 1792, November 20.—N^o 1918.

CLAY, HENRY.—"A new method of manufacturing pannels for coaches, and other carriages, also for tables, cabinets, pictures, and other furniture." The panels are made from blocks of slate, blue stone, Portland, or other stone. The block is sawn or otherwise divided into thin panels or plates; these are "ground or rubbed in the manner of plate glass," and afterwards japanned, painted, varnished, or otherwise ornamented. If the

panels are not strong enough, they may be strengthened by a back of wood, paper, cloth, or other material, which can be added to them before or after the japanning, &c.

[Printed, 4d. No Drawings.]

A.D. 1792, November 28.—N° 1919.

HUNCLASS, SAMUEL YOUNG.—“An improvement in the construction of canopy, cieling, wind-up or draw-up bedsteads, with or without bedding or furniture, for the purpose of obtaining room.” The frame of the bedstead is of the ordinary description. The legs at the foot are united to each other by a bar or rail, and to the frame by hinges; the legs at the head are attached by a pin and can be turned up when required, and kept so by a hook, bolt, &c. Four ropes fastened at one end, each to a side of the frame, ascend through holes in the tester over pulleys secured to the joints in the ceiling, thence over a series of four central pulleys to a counterpoise which is connected by a rope to a crane “in the most convenient place either in the room where the bedstead is fixed or any part of the house or premises.” The tester is fastened at each corner by a cord to the staple plates of the pulleys, so that, when the bed frame is drawn up, it takes the tester with it. The patentee describes modifications of the bedstead and various methods of raising it.

[Printed, 10d. Drawing.]

A.D. 1794, August 7.—N° 2005.

BENTLEY, HENRIETTE CAROLINE.—“A bed for fractures, gout, rheumatism, lying-in women, and bedridden persons, which may be made and the linen changed without incommoding the patient.” The bedstead and bedding are of the ordinary description. On top of the feather bed is “a straining frame of four sides” made of any wood or metal; it is divided into two parts (the division being at any place to suit the convenience of the patient), which are joined by “a double hinge;” the upper part, called “the sleeping desk or chair,” is raised and lowered by a rack; or it “has a small frame annexed to its sides in such manner as to raise the patient’s head and alter and relieve the position.” This frame is lifted by cords which pass over pulleys fixed to the four corners of the tester and descend thence to a

winding apparatus. On this frame are placed the under blanket and sheet. Upon the sheet is "a fracture frame" on which the patient lies; this frame is made of any material laced at intervals with bars of strong linen, cotton web, &c.; at the corners are metal rings, and, when the straining frame is elevated by turning the handle of the winding apparatus, the fracture frame is raised therewith and secured to hooks fastened by cords or straps to the bedposts.

[Printed, 6d. Drawing.]

A.D. 1794, August 13.—N^o 2007.

SWEETNAM, RICHARD, and HIGGS, JOSEPH.—"Certain new improvements in the construction of tables, sashes, shutters, and sliding hinges applicable to such shutters, and which improvements may be adapted to other useful purposes." The frame of the table is dovetailed and blocked firmly together; the corners are clamped with metal or veneered with wood, and tapped for a screw or nut for the attachment of the legs. A rib of wood is put across the frame from side to side in a groove, and slides backwards and forwards; this rib is provided with a screw pin or swivel on which the top leaf is fixed. To the leaf is hinged a flap of equal size, "and turns over on the top of the same with a peculiar hinge, going entirely along the ends of the two leaves," and having at the end a spring bolt which fastens another table that has a spring ketch fixed to it, firmly together, in form as a sett of dining tables." By introducing a wedge between the leaves the table can be used as a writing desk, and within the frame "is concealed every apparatus for shaving, dressing, and writing," with conveniences for books and packing up the legs. "Concealed spring hinges" are made as follows:—A box of any metal is made with friction rollers on the top and bottom of the casing, which is a bolt or carriage of any kind of metal forced out by means of a spring." This bolt "is connected by one, two, or more joints to another flap or hinge, to which is fastened the lid or door to be opened, the other part or box let into the article to which belongs the lid or door." Spring fastenings for hanging sashes are thus described:—"The meeting rail is ploughed out; one of them has a tongue of brass, copper, wood, or any kind of metal, which tongue shoots into the other groove in the meeting rail

“ by means of springs fixed behind the tongue, which when pulled down fastens the window, and is air-tight; the lines are carried in the surfeit by means of pulleys.” Concealed rolling shutters, in various joints, act behind the front linings of windows, or roll up to the surfeits.

[Printed, 4d. No Drawings.]

A.D. 1797, February 15.—N^o 2167.

DE CHEMANT, NICHOLAS DUBOIS.—“ A certain table, with a stove placed within the centre thereof.” The table may be of any shape, and of any kind of wood, and be supported by any number of legs. It has an opening in the middle, and a passage from the opening to the outside. The passage is contrived by lowering two hinged flaps, which are kept up when shut by two moveable cross pieces of wood. The stove which stands on the floor may be of any shape, but the best is a circular form with a flat front. The top is a dome provided with a hole through which the smoke rises, and, passing down the sides and back into conducting pipes “ which go round the legs of the table on the floor,” enters a larger pipe, and thence discharges itself into the chimney. A metal plate and cover may be placed on the top of the stove for warming plates and dishes. The heat is regulated “ by means of an extinguisher for the purpose of putting out the fire when the apartment becomes too hot.” The poker is made with “ two hooks placed on the two opposite squares at the end ” to prevent it “ from falling out of the grate.”

[Printed, 8d. Drawing. See Rolls Chapel Reports, 6th Report, p. 192.]

A.D. 1798, January 16.—N^o 2208.

ECKHARDT, ANTHONY GEORGE.—“ Invention and improved method of making chairs, sofas, stools, benches, &c. &c., adapted for rooms or carriages, with backs and seats, or cushions fixed in such a manner as instantly to change and shew two different surfaces in one seat, or cushion, or back, in a more secure and useful manner than any hitherto ascertained; and also preserving covers on a new construction, whereby several different surfaces may be introduced and used in one seat, back, or cushion.” The first part of this invention consists in constructing “ a double instead of a single seat or cushion with two different surfaces.” The seat turns on a pivot and

is kept in its place by two pins or stays in the frame. Or the seat may be made to fit exactly the inside rabbet of the frame. Or the seat and back may be of precisely the same size, and "swing round on an axis" so as to change places. To carry out the second part, a frame is employed of metal or other material, elastic or not, which fits tight round the seat or back. On the inside of the frame is fixed "double cloth stuff" or other substance "convenient for covering of chairs." This "preserving frame" may be arranged to turn on an axis and serve as a cover for either seat or back. All these constructions "must be well secured by a pin or pins, or spring lock;" and "some deviations according to circumstances" may be made therein.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th Report, p. 193.]

A.D. 1798, July 6.—N^o 2248.

GUNBY, DAY.—"Entire new weights, bolts, and springs, for improving all kinds of writing and reading desks, tables, chairs, stools, tambour frames, library steps, bedsteads, and various other articles." The improvement claimed is a method of readily raising or lowering the height of desks, &c. &c. Sliding legs of wood or metal, supporting the surface of the article, and cut with notches, holes, or mortises to serve as racks, are fitted into the ordinary legs. At each side of the article is a pendent weight attached to cords or lines, which, passing over central pulleys and others at the corners of the frame, are fastened to the sliding legs. Bolts of wood or metal which enter the racks are fixed at the internal corners. The bolts are connected by means of levers and springs to a trigger situate in front of the frame; by pulling the trigger the bolts are withdrawn from the racks, "which leaves the desk suspended in such manner as a well-hung window sash is." There may be modifications of this arrangement. One weight may be sufficient; springs may be substituted for weights, and weights for springs. "The position of the triggers, cords, or pulls, may be varied as convenient." The top of the desk may be made on each side with a sliding case containing a drawer.

[Printed, 10d. Drawing. See Rolls Chapel Reports, 6th Report, p. 194.]

A.D. 1799, November 4.—N^o 2352.

BINNS, THOMAS.—"A machine or apparatus answering the several purposes of a portable water closet, a bidet, and easy

"chair," occupying less room than portable closets now in use, and "particularly calculated for travelling, or for camps and ships." This invention is an improvement on the portable closet previously invented by Mr. B., and having the back (enclosing the water cistern) "vertically fixed upon the seat;" in the present one, "the back shuts down upon the seat in the manner of a lid." This advantage is obtained, 1, "by a screw jointed tube," consisting "of two angular parts, made of brass or any other proper materials." The end of one part is secured in the bottom of the cistern, and the end of the other part is attached to the basin. "The two parts of the tube are firmly connected by the one screwing into the other," and they "serve at the same time as a joint for the back to turn upon." When the back is raised, "the screw of the tube is perfectly close or home, the extremity of the female screw pressing against a small collar of leather, which surrounds the shoulder of the male screw." 2. "By a jointed tube, varying from the above only in being a cock joint instead of a screw." 3. "By a sliding jointed tube of two parts, each forming a curve of a quarter of a circle." 4. "By a leathern or other flexible or jointed tube attached to the bottom of the water cistern and to the side of the basin." The rim at each end of the bidet pan rests on the front and back edge of the seat immediately over the basin; the bidet is supplied with water, either by a separate pipe or by the channel through which water is admitted into the basin, "and for this purpose an aperture is made in the upper part of the back end of the bidet pan, sufficiently large to admit the fan of the pan leading into the basin. Arms or handles make the closet serve as an easy chair; these "are in two parts, joined by a screw near the angle, and one part of the arm, when joined or screwed together, is attached or fixed to the seat of the closet, and the other to the back, by means of sliding fastenings, by which means these arms are made to engage or disengage for the different purposes the closet may be used for, and also for the convenience of packing in the internal part."

[Printed, &c. Drawing. See Repertory of Arts, vol. 15, p. 78; Rolls Chapel Reports, 6th Report, p. 148.]

A.D. 1800, April 29.—N^o 2393.

MARSHAL, JOHN. — "Dining and other tables on an improved construction." The table described is a round table

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with one pillar and two flaps, one of which is made to fall down perpendicular to the other when not in use. The block which supports the flaps is formed on each side with a rabbet, and on the under side of one flap pieces of wood are screwed which cause it to act as a drawer, the distance to which it can be drawn being regulated by a groove in the block. When the fallen flap is raised, it is kept in position by part of the block and by two brackets. The same table may be made with three flaps, the middle one being united to the others by iron hooks and grooves, or "by iron bolts passing through cross rails." The same table may be extended by means of a sliding frame let into the block; and further still, by repeating the sliding frame and by "connecting therewith temporary stays in ornamental wood or iron." To increase the strength there may be added "common legs with castors to run the frame out by." A long table with eight flaps and supported on two pillars may be constructed on the same principles; it "may be reduced to a table of four pieces, which brings the two pillars together."

[Printed, 1s. Drawing. See Rolls Chapel Reports, 6th Report, p. 140.]

A.D. 1800, May 1.—N^o 2396.

GILLOW, RICHARD.—"Improvements in the method of constructing dining or other tables." This invention is "calculated to reduce the number of legs and pillars and claws in the construction of dining and other tables, and to facilitate and render easy their enlargement and reduction in size." It consists in attaching to a table mounted upon a frame and legs or a pillar and claws wooden or metal sliders which run in dovetail T or square, or cylindrical, or other grooves, with or without wheels or rollers. The sliders are drawn out to the length required, and flaps are laid on them. For constructing "long and extensive dining tables, the sliders are attached to two or more dining or other tables or ends of tables;" the "most extensive sliders" are fastened together by means of wooden or metal forks or other fasteners, and extra flaps are laid thereon.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 6th Report, p. 197.]

A.D. 1800, July 1.—N^o 2420.

ELWICK, JOHN.—"A new or improved method of framing together chairs and sofas of every kind and sort whatsoever,

"and which invention is intended to be applied to every description of household furniture." This invention "is principally useful and convenient for package for exportation." The front legs and the part of the back forming the hind legs are "tapped with either a right or left hand screwtap," and joined by "stretching rails," provided with screw ends. The seat is moveable; at its back is a dovetail slide which slides into a groove cut in the inside edge of the back rail; underneath its front are two holes into which fit two pins on the top of the front legs. In another arrangement there are not any stretching rails; the back is fastened to the sides by means of tenons or dovetail rests and braces, "the ends of which are made bevelwise, and are to drive into the top and bottom edges" of back and sides "a little wedgewise, to make a close joint" before the screws are applied. The screws are of wood; they are contained "in two holes in both ends" of the said frames; on the heads thereof "each has a metal hoop with holes bored through the four quarters; into those holes is to be introduced an iron instrument (or one made of any other material fit for the purpose), a little crooked near the point, so that in each hole the instrument will turn the screw round a quarter of a circle." The holes may be at the top and bottom of the side frames. In another arrangement there are not any holes for screws "but what are bored through the outside" of the hind legs.

[Printed, 6d. Drawing.]

A.D. 1801, October 8.—N^o 2542.

BULLOCK, WILLIAM.—"An improved fastening to be applied to sashes or dining tables." The fastening is composed of two plates, the one carrying a spring and a lever which works backwards and forwards on a screw or pivot, the other carrying a circular hook; the former, about three-quarters of an inch wide, is fixed on the upper or back sash; the latter on the lower or front sash. The back plate has behind an edge about half an inch high to which the spring is secured. The lever "is made about three-eighths of an inch thick at the head where the screw or pivot passes through," and about an inch and a half long; in the head where it works on the pivot is placed "a small wheel or roller in the angle;" this acts upon the spring, takes off the friction, "and gives it a lively motion." At the other end of the lever which passes under the

circular hook on the other plate is "a rising part which passes round such circular hook and draws the two bodies tight together." On the rising part is a knob or handle. Modifications:—1. "Intended for tables as well as sashes;" the edge of the back plate is lower, the spring is fixed to the bottom of the plate, and the end of the lever is formed with a thumb piece. 2. "For high windows that cannot be got at easily," the plates are reversed in position; in the end of the lever is a hole to fasten a line "by which the fastener will be easily opened," and on the lever is a quadrant pierced with a hole for another line, by pulling which "the fastener is fixed." 3. "For sashes or dining tables;" there is no edge to the back plate, and the spring, "a strong open one," is fixed to the plate by a single screw. "When used for tables the screw or pivot is on the under side of the lever, and the female screw in a box or socket on the under side" of the plate. 4. "For tables or other flat bodies;" instead of a roller "there is a link or chain connected with the head of the lever and the end of the spring, which takes off the friction." 5 differs from the fastener first described in not having an edge to the back plate, and in having instead of a roller "a small piece of steel or iron fixed in the angle of the lever to act upon the spring." The spring, which is straight, is fixed into the plate.

[Printed, 6d. Drawing.]

A.D. 1802, November 6.—N^o 2657.

WALKER, ROBERT.—"Dining and other tables on an entire new principle, which, besides other advantages, will save a great portion of the room or space occupied by tables of the present make, and which principle is applicable in the manufacturing of dumb waiters, and various other purposes." The table, consisting of a top and flaps "made to shift with strap hinges," is supported on four claws, two of which turn in and out by the action of two brackets, so that, when turned in, the four occupy the exact space of the diameter of the pillar, which in general is five inches." One bracket turns its claw "by an iron centre which passes through the pillar, having a crosshead at the top, with a parallel opening, in which the pin on the plate of the bracket works," and which "at the bottom is square and fitted into the plate, screwed on the bottom of the claw;" the other bracket acts at the top in a similar manner, but at the bottom

there is "a crosshead and a projecting pin, which works in the " plate that is screwed on the bottom of the claw." Two other brackets, without any action on the claws, support the top which is screwed to a fixed rail. Round the pillar is a brass rim in which the top of the claws slides, "the claws having an iron plate with a " shoulder screwed on the inside." Tables thus constructed may be joined together with brass fastenings so as to form "a complete set of dining tables," and will, when let down, "stand in " the space of a single table made on the most approved principle " in present use."

[Printed, 1s. Drawing. See Rolls Chapel Reports, 6th Report, p. 201.]

A.D. 1803, June 14.—N^o 2712.

THOMSON, JAMES.—"Certain new improvements in the hanging of bells, window curtains, window and other blinds, and other things." Several methods of hanging bells are described, in most of which a balance is employed instead of a spring. 1. "A bell and carriage without any spring." The carriage to which the bell is attached moves upon a pivot driven into the wall; a balance is screwed to the neck of the carriage, and a screwed eye, to which the wire is fastened and by means of which the wire is kept perfectly straight, passes through a hole in the top. The eye is sometimes dispensed with and the wire is fastened to the hole. In a modification the pivot is made to move up and down so as to keep the wire straight. 2. "A crank on a screwed plate." A stop "checks the crank to its proper position and prevents it from " being pulled too far:" a balance screwed into the crank answers "instead of a check spring." The plate may be omitted and the crank fixed to the wall "by a pick." The plate may have a mortise cut in it and the crank may be let into the wall. 3. The wire may be fastened to a lever "that screws upon the wall and " pulls down " by a handle balanced to stand up; or the lever may be fixed "on the surbase" and the pull may be from below. 4. This arrangement is composed of a crank (with one arm) on a screwed plate, a balance attached to the crank, and a "slip pull " with a jointed head." 5. A bell "and carriage to strike but " once." The carriage is fixed to the wall by a pick; at the bottom is the bell, and at the top a crank arm "turning on a pin " with a screwed nut." The hammer is screwed or rivetted into the crank arm and prevented from lying on the bell by a pin on the

carriage. The patentee describes also a roller blind to work by a balance. "A piece of tape painted to keep it straight when rolling "round the pulley" has suspended to it by a swivel a brass or iron rod "to answer as a balance to the weight of the cloth." This balance may be applied to Venetian blinds, window curtains, and map rollers.

[Printed, 6d. Drawing. See Repertory of Arts vol. 5 (*second series*), p. 8.]

A.D. 1803, August 3.—N° 2727.

OLIVER, LAVER.—"Dining, card, pembroke, and other tables "upon an improved construction." The card table stands on a pillar and claws. Inside the frame is a cross rail "to receive "the centre bolt for the top to swing by with stops." A cross plate is used "in lieu of the centre square plate." A spring bolt keeps the top in its place when turned either way; this bolt strikes against "a quadrant plate;" a crank spring, wheel spring, or thumb spring, may be employed for the same purpose. The pillar is made to screw on the block, "or fixed in wood, iron, "steel, copper, or any metal." The claws are either fixed or made to take off the pillar. "Loo and pembroke tables are made "on the same construction." In the dining table, mounted also on a pillar and claws, the top swings round, "with a centre bolt "and plate screwed to the top;" and a rail across the frame receives the bolt "for that use only." Every plate, &c. is upon the same construction as in the card table, "with the addition of "lopers with square or round corners, with feet or claws, with or "without castors."

[Printed, 8d. Drawings.]

A.D. 1805, November 19.—N° 2895.

POCOCK, WILLIAM.—"An improvement on tables for dining "and other uses." On the table frame two rails are fixed whereon are placed two pulleys, one at or near each end for "a long "motion," but near the middle for a shorter motion. A frame is made to move inside and another outside of each rail, and lines or chains are passed round the pulleys and fastened to the frames. The table frame is lengthened by pulling a handle at each end. When "more strength or duration is required," a cog wheel is fixed on each rail and a rack on the inside of each frame.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 7th Report, p. 188.]

A.D. 1805, November 26.—N° 2898.

BROWN, RICHARD. — “Improvements in the construction of several parts of tables, and of various other articles of household furniture which stand upon or are supported by legs or feet.” Three inventions are described in the Specification; a new mode of lengthening the frame of a table; an instrument for connecting “two brackets placed on the opposite sides of a block or frame,” so that one motion causes them to move in or out; and an instrument for connecting and moving two brackets on the same side. The end rails of the table frame are connected by pieces of wood so jointed together as to form what are commonly called lazytongs. Between each pair of tongs may be a cross rail to which legs or other supports may be fixed. The end flaps are hinged to blocks on the end rails and supported on brackets in which are cut recesses to receive the blocks when the flaps are down. The first instrument consists of three pieces of any suitable material pinned together, one to each end of the middle piece (which is pinned to the block or frame) and to the middle of each bracket. One bracket has a handle by moving which motion is communicated to the other. The second instrument is of a T-shape, having in each arm a slot wherein moves a pin fixed in each bracket, and in the body two slots; pins projecting from the lower surface of the frame enter these slots and guide the instrument in a straight direction to and fro.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 8 (*second series*), p. 401; Rolls Chapel Reports, 7th Report, p. 188.]

A.D. 1806, July 24.—N° 2949.

DE BERENGER, CHARLES RANDOM.—“A certain animal substance and a method of preparing and manufacturing the same whereby the said substance becomes applicable as a substitute for horse and other hair now used for the stuffing of cushions, mattresses, carriages, sofas, chairs, &c., and all other purposes for which flocks, wool, or hair are now generally applied.” The substitute is the hair or coat of hogs (not the bristles or mane); “long hair of large hogs is the best for the purpose, but even that of pigs may be made use of.” The hair, after being scalded and scraped off, is washed, cleansed, and thrown into lime water, “where it may remain from one to two days;” it is then washed in cold water and twisted into a cord “of about the thick-

"ness of a goose quill." The cord, while twisting, is forced into a tin, glass, or other tube of about "three-quarters of an inch diameter and from fifteen to thirty or more inches in length." The tubes when full "must be corked up close at both ends;" they are to be placed in a copper of boiling water, "where they" should continue for two hours, the water boiling the while." When the hair is taken out of the tubes it is left to cool "in solid pieces;" these are afterwards unpicked, "when the hair will be quite curly." It is next loosely thrown into large earthen pans with fine dry sand at the bottom, "and a layer of dry sand is sifted on every layer of hair till the pans are filled; they are then tied over with brown paper and put into a hot oven, where they may so remain for three or four hours (the heat must not be sufficient to burn the brown paper, but nearly so); after the sand is quite cold it is passed thro' a sieve, and the hair will be found fit for use, having obtained a good curl and fine elastic power."

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 11 (*second series*), p. 185; Rolls Chapel Reports, 7th Report, p. 195.]

A.D. 1807, December 16.—No 3090.

REMINGTON, GEORGE. — "Improvements on tables and couches." The moveable parts of these tables when drawn out form a lazytongs. The legs, of which there are two to each division of the tongs, "are fixed in joints made of brass, iron, or any other suitable materials." The joint is constructed "with a hollow thimble or cylinder." In one drawing of the expanding part the legs are somewhat differently arranged, but no description is given. Couches and chairs are made capable of expansion on the same plan as the tables. An expanding support for drapery or curtains round a couch or chair is composed of six ribs or laths (more or less) connected at one end by jointed pieces, and at the other to a plate of wood or metal. A rod of any material, on which the plate is screwed or otherwise fixed, is "constructed to slide in a groove or to screw down behind the back, side, or end of the chair or couch." A globe table is made with two moving parts or quarters which work upon hinges. These quarters can be drawn up and locked; or one of them "may be kept up, and the others let down, by means of a barrel spring and pulley;" both quarters may be let down by a similar

contrivance. The lock is constructed with two spring bolts which act independently of each other; when the key bolt is shot, it enters into a notch or space "made into or between the " two spring bolts, which prevents their action up or down."

[Printed, 8d. Drawing. See Rolls Chapel Reports, 7th Report, p. 199.]

A.D. 1808, July 25.—N^o 3153.

CROSBY, BENJAMIN.—"A machine or stand for books, which " may be made either circular, square, or any other convenient " shape, and which may be turned or moved at pleasure, with " cases to receive books, as well as various other articles and " things." This book stand is composed of a central shaft or column and fixed shelves at suitable distances above each other, containing each a roller or cylinder and screwed to the shaft; a book shelf is fixed to each cylinder. Each book shelf is divided into compartments by cross pieces; the interstices are "to be " filled up with blank or sham books, with labels of popular " books, or in any other ornamental way."

[Printed, 8d. Drawings. See Rolls Chapel Reports, 7th Report, p. 107.]

A.D. 1809, March 20.—N^o 3217.

HAKEWILL, JAMES.—"An improvement in the construction " of tables, chairs, and stools for domestic, military, and naval " service, and in the packing of the same." The table-top is hinged to two legs, the upper extremities of which are, by preference, connected by a cross rail. Two shorter legs, framed together by cross rails at the top and near the bottom, are joined to the first-mentioned by straps at the top, and pins at such a point that the table-top may be level, and that, when the whole is packed up, the cross rail at the top of the shorter may be disposed within that of the longer; it is prevented from passing beyond by a stop. Legs of chairs and stools are made on a similar plan. Underneath the front of the seat one or more hooks or claws are fixed, which "bear against the outer face of the cross rail" on the top of the shorter legs, thereby relieving the strain on the straps. The chair-back is hinged to the longer legs. In the drawing is represented a table packed together, and a chair "stowed " or disposed between the framing of the legs of the table," and secured by a strap and buckle.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 7th Report, p. 284.]

A.D. 1809, December 5.—N° 3282.

BARRON, JAMES.—"Improvements on the apparatus used for "rollers for window blinds, maps, and other similar objects." The roller is suspended by cylindrical or conical pivots and sockets to brackets fastened to the lath. The right-hand bracket is a spring, "the use of which is to keep the blind to any part of the "window where drawn to;" its force is regulated by a wedge, "which causes it to raise the roller, and to press the pulley more "or less against an iron or metal plate fixed to the under side of "the lath." The wedge, which is acted on by a screw let through the edge of the lath, "moves in a slanting bed sunk in the top "of the lath, under the spring, and crosswise." The line winds round a small spindle between circular plates. The left bracket may be fixed to the under side of the lath, "and contrived to "slip outwards." In this arrangement the bracket slides between a metal plate and the lath; "it is retained to the plate at the "outer end by a staple," and it has at the inner end a button, which slides through a slot in the plate; the slot has a notch in the side at the inner extremity into which the button is forced by a spring. For adjusting the pivots with greater nicety, one of them may be made to screw through its bracket.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 16 (*second series*), p. 211; Rolls Chapel Reports, 7th Report, p. 109.]

A.D. 1810, May 22.—N° 3339.

STEWART, CHARLES.—"Improvements in the construction "of dining and other tables." The table is composed of an outer frame and two flaps of unequal size; the larger is divided into two parts, such that one part is equal to the smaller part and the other flap; the divisions are jointed or hinged together. The outer frame contains on either side a sliding frame, each having a cross rail; on one rail the smaller flap is fixed by a centre; in the rail is a circular groove, in which moves a quadrant fastened to the flap; to the other rail, the larger flap is joined by a moving bar, which is screwed to the smaller division and attached to the rail by an axis. Each frame is supported by another sliding also in the outer one; the lower frames rest each on two legs. "To counterpoise the effect of the lever or slide at the extremities "of the frames," tongues are fixed at the other ends, "which "slide in grooves in the inner sides of the other frames, or vice

“ versa.” When the table “ is in its most compact state,” the sliding frames are concealed, the rail of the smaller flap covering the bar (except the part which is screwed to the division) and coming exactly over the axis; the larger division folds back upon the smaller one and flap; the two flaps are kept together by forks, and being turned round a quarter of a circle cover the outer frame.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 7th Report, p. 110.]

A.D. 1810, October 8.—N^o 3387. (* *)

PARKER, EBENEZER, and CLULEY, FRANCIS.—“ An adjusting bedstead on a double frame, with a fourfold motion for the relief of sick, lame, infirm, and aged persons.”

The advantages of the bed are stated in the Specification to be as follows :—

1. It can be placed in an inclined position, the head being raised higher than the feet.
2. It can have an inclination sideways, one side being lower than the other, while the head and feet remain on the same level.
3. The frame supporting the mattress and bed can be divided into two lengths or parts, and while the one remains level, the other can be raised to support the head and body.
4. The frame at the feet of the bedstead can be raised so as to support the legs and thighs to allow the knees to be bent.

The bedstead consists of two separate frames, the outer one consisting of four posts and four rails. The inner one may be adjusted to the required necessities of the case. The adjusting frame is suspended by gudgeons, centres or pins, and a long centre or pin is fixed to it, projecting some distance from it, and rests on the head rail of the external frame. When the adjusting frame is placed horizontal, the bed has the appearance of a common bed. When the adjusting frame has to be raised at the head, the gudgeons at the feet are withdrawn, and to facilitate this the gudgeons at the sides and feet are cut with screws and are fitted into metal nuts fixed into the exterior frame, the ends of the said screw gudgeons are received into the holes made in pieces of metal to the sides and lower end of the adjusting frame. By turning the gudgeon at the foot back by the winch handle indicated, “ its end is withdrawn from the adjusting frame, and “ then by raising the center or pin, the adjusting frame is ele-

"vated" to the required position and retained in it by two bolts. In order that the bed may incline to either side, the side gudgeons are withdrawn, leaving the frame to rest upon the gudgeons at the head and feet. The adjusting frame, though in the foregoing remarks considered as having its sides in one piece, is in fact in two lengths, connected by a hinge or other joint, and held firmly together by bolts which pass through cramps and through the other part of the adjusting frame. When the bolts are withdrawn, the upper part of the frame may be raised, while the lower remains fixed horizontally.

[Printed, *6d.* Drawing.]

A.D. 1811, March 6.—N^o 3406.

STURGEON, THOMAS WILLIAM.—"Improved castors." For the ordinary castor wheel is substituted a ball or spherical piece which is placed beneath the bearing part of the article of furniture "in a fit cell or cavity in a metallic cavity" fastened to the said part. In order that the ball may not be liable to fall out of its cell "I do include," says the patentee, "the same" "therein by means of a perforated cover screwed or properly" "adapted and secured to the lower part of the said metallic cap," "so as to admit a certain portion of the surface of the said ball" "or spherical piece to be prominent thro' the perforation and" "beyond the surface of the said cover to the extent or quantity" "of about one-third part of the circumference of the said ball." And in order that the ball may revolve in any manner whatsoever, "I do dispose and fix in the said cell or cavity a set of friction" "rollers consisting of three or more in number; but in general," "and by preference, I use six of the same size and form having" "the axis or bearing parts of revolution thereof circularly or" "polygonally disposed in such a manner as that the faces of the" "said rollers shall all be in regular contact with and around and" "sideways against the said ball or spherical piece when put in" "its place, and that a line supposed or conceived to be drawn" "from the centre of the ball when so placed to the point of" "bearing of any one roller shall form an angle of about one" "hundred and twenty degrees, more or less, with another line" "drawn perpendicularly from the said centre to the point of" "bearing of the said ball upon a level floor." The above con-

struction "will admit of considerable variations in the dimensions
"and relative positions" of the several parts.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 20 (*second series*),
p. 71; Rolls Chapel Reports, 8th Report, p. 83.]

A.D. 1811, May 21.—N^o 3450.

JENKINS, WILLIAM.—"An improved method of manufac-
"turing flat-backed handles and rings of different shapes and
"forms used with or affixed to cabinet and other furniture and
"things." By this method of manufacturing the patentee saves
"a great deal of unnecessary labour," and utilises "the frasing or
"surplus metal" by taking it off "in such large fragments as to
"render the waste with common caution very trifling." The
lower die used is "one sunk after the manner of the lower die
"hitherto used in stamping handles and rings not having flat
"backs thereto;" the upper or shank die is "one with an
"entire flat or smooth face" which causes the back of the
article to be "so extremely even that the removal of the frasing
"or surplus metal on the sides by the piercing and clipping of
"some articles or by clipping only of others with tools at a press,
"is thereby greatly facilitated." The greater part of the frasing
is taken off from the inner side of the article "with a pair of tools
"at a stroke or blow from the press;" then from the outside by
a like process, so that only a small part of the frasing with the
sharp edges of the same is left on each side "to be afterwards
"smoothed by floating and turning or by floating only."

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 86.]

A.D. 1811, July 2.—N^o 3462.

SUTTON, RALPH.—"An improved self-acting curtain or window
"blind rack," composed of an ornamental metal case, a spiral
spring, and a pulley mounted in a metal box. The spring is of
hardened steel wire; the upper end is fixed near the top of the
case, the lower end in the pulley box. The case is grooved "to
"admit the passage of the pulley box up and down as the spring
"contracts or dilates." In a modification, which admits of the
cord being removed and replaced without severing it, a pulley is
secured in front by an ornamental rose attached to a moveable
tube which plays in the case. The spring is coiled round the

tube, having one end inserted in the lower extremity thereof, and the other loose.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 20 (*second series*), p. 67; Rolls Chapel Reports, 8th Report, p. 86.]

A.D. 1811, July 24.—N^o 3467.

BASTONE, JOSEPH.—“Improvements applicable to bedsteads “ and various other things.” This invention consists of a “joint to “ be fixed to the sides, head, and foot-pieces of a bedstead or any “ other article to be fastened or framed together.” The joint is made in two separate parts; one part consists of a flat plate having in it “a square mortice hole;” there is a tenon at one end of it, and an ear on each side; the other part “to be fixed to bed post or “ any other piece of a frame” is “a flat metal plate” carrying “a “ projecting hook or tenon, the head of which is of the size to fit “ and pass into the square mortice hole,” and a projecting piece or staple having “a mortice hole of the size to receive the tenon” at the end of the first part. The two parts are fixed with screws. “ This joint may also be varied in size and in the position of the “ hooks or mortice, and there may be as many hooks and “ mortices in each as may be deemed expedient.” The shape of the joint may be “straight or curved as may be found necessary;” the joint may be made “of any metal composition or compositions of metals or of woods.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 20 (*second series*), p. 136; Rolls Chapel Reports, 8th Report, p. 85.]

A.D. 1811, September 9.—N^o 3483.

JENKINS, WILLIAM WALKER.—“An improved method of “ manufacturing drawer and other knobs of different sorts and “ forms used with or affixed to cabinet and other furniture or “ things.” The patentee employs “materials different in certain “ parts” from those in ordinary use. One sort of knobs he makes “with bodies composed of tinned sheet iron,” or “sheet “ iron or cast iron;” a second sort with bodies of the same material as the first, “but the roses thereof are made out of “ tinned sheet iron;” and a third sort with bodies and roses similar to those of the second, “but the fronts thereof are made “ out of tinned sheet iron.” To finish the bodies of each sort, he cuts out the blanks, stamps, burnishes, clears off, and lackers

those made of tinned sheet iron, and tins, varnishes, or lackers those made of sheet iron or cast iron and combines them "with the other necessary parts." The roses and fronts after undergoing the same processes as the bodies, are united with the bodies to the other necessary parts.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 87.]

A.D. 1812, February 4.—N^o 3533.

STEINHCEUSER, JOHN LEBERECHT. — "An improvement applicable to fire screens, music stands or reading desks, and candelabres." The patentee constructs "the principal part of the upright support" of these articles "of two or more tubes sliding successively," and fixes the inner tube, when occasion requires, by the following arrangement:—The mouth of the outer tube is surrounded with a welt "cut externally into a screw and tapered so as to be rather smaller in diameter next the mouth;" a ring with an internal screw is fitted thereon; the outer tube and external screw are slit on both sides and bent "a little outwards," so that the ring when screwed downwards will tend to close the slits and will cause the outer tube to grasp firmly the inner one. To prevent the articles from descending suddenly a counterpoise is employed; this is suspended "within the lower tube or interior part of the stand by means of a string or chain which passes over a pulley" supported on the upper extremity of a fixed rod; it is perforated so that in its rise and fall it passes over the rod, and a notch in its side and a projection along the rod keep it from turning round. In some large candelabra multiplying pulleys "of the nature of a tackle" are required. Or "a reacting spring" may be used, "inclosed in a barrel, and if need be, from length of run, regulated and equalized by a fusee;" the spring and its fittings are concealed in some convenient part of the stand. Music stands and reading desks are supported on platforms by means of "a two-fold joint," consisting of "a best compass head joint" and a pivot or centre pin. The "several slant positions" are regulated "by a springing catch acting in holes in the middle piece of the said compass head joint;" and in fire screens (which have only a horizontal motion) there is not a compass joint, only a pivot being required.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 88.]

A.D. 1812, February 19.—N^o 3539.

FIGGINS, THOMAS.—“A couch, which I denominate a palen-quin couch, upon an improved construction.” The frame is of wood, oblong, folding in the middle on iron or brass hinges, and having a canvas or cane bottom and six or more screw legs. There is a scroll head of wood or canvas, stuffed with hair, wool, or flock, and fixed to the frame with bolts and nuts. At each end of the frame is an iron frame with three joints, and fastened with four bed screws and nuts. About four inches from the bottom of the iron frame are four iron spikes, which traverse and support it when turned up. At the top corners of the iron frames are “pulley wheels for the lines to run in, for the support of the curtains and canopy.” One iron or brass rod, folding in the middle, is fixed on the top of the iron frames, and supports the curtains, &c. “when turned up as a bed.” The sides and ends “are made of canvas, with a pair of clews to swing, if wanted so to do.” In the daytime “it forms a handsome couch; in the night, when turned up, a handsome bed, to swing or stand, with canopy and curtains.”

[Printed, 4*l*. No Drawings. See Rolls Chapel Reports, 8th Report, p. 91.]

A.D. 1812, March 14.—N^o 3548.

LOACH, JOHN.—“An improvement in the method of manufacturing claw, socket, and other kinds of castors, and also knobs and furniture for locks.” The sockets and wheels of the castors and the cups and necks of the knobs and the roses of lock furniture are made of cast or wrought iron and cased with metal of any description required or with any kind of mixed metals, provided that the same be sufficiently malleable. To cover round sockets the metal casing is formed “by means of a stamp press or any similar method in dies or moulds,” and the ends are soldered together; the casing is then forced upon the outside of the iron socket and fixed in a lathe, and the top edge is turned over; a piece of like metal is secured to the bottom of the socket, and the bottom edge of the casing is turned over upon it so as to conceal the iron. In square sockets the casing is made “in dies or moulds in two halves” and soldered together. In claw castors “the top part or front and sides of the sockets” are of cast iron, and the under part “and the part called the

"strap" are generally of wrought iron; the parts are soldered together and cased as before described. The casing for the wheels is made in three parts, namely, two sides and a rim; these are applied to the iron wheel, and the edges of the rim are turned over upon the sides. The castors are finished with brass horns in the usual manner. In lock furniture the patentee thus describes his method of casing :—"I raise a case or cover for the cups and roses in dies or moulds of a proper size, so as exactly to fit the iron cups and roses, and the iron necks being cast rather smaller than usual, I lay them hot into a mould and cast a proper layer or thickness of brass over them, or raise a case in a die or mould in two halves and solder it together over the iron neck. I then force the stamped case or cover upon the iron cup and rivet the cup and neck together and set in the knob, top, or front in the usual manner, and the stamped case or cover being fixed on the iron rose, I fix them in a chock in a lathe and turn over the edge of the cover upon the iron rose."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 91.]

A.D. 1812, April 30.—N° 3560.

THOMPSON, JOHN THOMAS.—"Improvements in the making of iron bedsteads and testers of every description." This invention consists "in making bedsteads and testers, and frames for bedsteads," with hollow iron or steel tube, plated with brass or any other metal, or "of uncovered tube, or of every description of hollow tube made from metal or a combination of metals."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 89.]

A.D. 1812, August 28.—N° 3597. (* *)

PAXON, GEORGE.—"Improvements in the manufacture of a bedstead or bed frame to relieve the bedridden, the ruptured, and sufferers with broken limbs, gout, or any other affliction." In the Specification the bedstead or bed frame is described as having ten movements, by which the patient may be raised gradually from his horizontal position to any angle till fairly on his seat; a part of the apparatus may be let down so that any application may be made to his back and shoulders; by

two combined movements placing him on his right or left side at any angle; elevating him from the horizontal position from the feet to the head or from the head to the feet; raising him with his mattress and bedding, with his bed frame, for purposes of cleanliness; suspending him above his bedding, so that all upon it or connected with it may be changed.

The machine consists of a framed bedstead, "which will lay on any other bedstead, containing two lifting frames resting on ledges inside the frame, and a sacking frame with double screw rails, one at the head and one at the feet, for the double purpose of either lightening the sacking or moving the centre hole," to suit the convenience of the patient. "The two lifting frames and the sacking frame are hinged right and left side, to raise alternate. Two uprights, morticed into the head and foot rail, will support an iron shaft or spindle, at each end of which are two cog wheels, which rise two upright iron racks perpendicular, working on the two wood uprights. These racks are connected with or disengaged from the bell-shaped irons to perform the different motions of the inner frame, which motions are all accomplished by one handle. On the framed case rests an additional frame, occasionally to raise the body, independent of the bedding, for the purpose of changing the same.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 90.]

A.D. 1812, October 31.—N^o 3609.

COOK, BENJAMIN,—“An improved method of making or constructing window blinds, fire screens, chimney pieces, sashes, doors, picture frames, and frames for dressing, pier, and other glasses, and various other useful and ornamental articles and things.” The invention consists in employing for the manufacture of these articles “certain sizes of the brass rodding, as manufactured under the Patent granted to T. Attwood and myself, on the 27th of June 1811, or rods of metal only, or solid iron rodding covered with brass or other metals.” The Specification contains details of the mode of manufacturing, but the patentee does not ground his claim thereon, claiming only “a new application of those materials to the formation of articles which have never before been formed of such materials.”

In addition to the articles named in the title he makes of the rodding frames for carriage windows, wheels, baluster bars, cor-

nices, mouldings, and spears; these last are made telescope fashion, the tubes, when drawn out, being prevented from slipping back by small catches or springs. He claims also "the exclusive right of making four-post, tent, folding, and all other kinds of bedsteads, from the before-mentioned materials, or from solid rods of wood covered with metal.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 97.]

A.D. 1813, April 7.—N^o 3677.

BENNETT, JOHN.—"A metal dovetail joint applicable to portable and other furniture and any kind of framework requiring strength and durability, and to many other useful purposes." The joint is composed of two pieces of metal with or without side plates, "one with the male part of the dovetail taper three ways, attached to a plate, which plate is to be screwed or otherwise fastened to any post, leg, stile, or any piece of framework; the other plate contains the female part of the dovetail to be fixed as may be required to railing or any kind of framework with plates and screws," or in any other convenient way. Two pieces of any material united by this joint can be separated "without drawing any screws or nails or making use of any tools." In the plate carrying the male part is "a square mortice to receive the base lath when made use of for a bedstead."

[Printed, 4d. Drawing.]

A.D. 1813, May 22.—N^o 3698.

JENKINS, WILLIAM.—"An improvement in the method of manufacturing socket castors used with or affixed to cabinet and other furniture and things." These castors are made "some with raised sockets, others with stamped sockets, and others with sockets both raised and stamped," each "being made whole and not in parts, and made out of composition metal, commonly called rolled metal." The sockets are produced "by raising them either at a press, or a stamp, or at both, and by stamping some sorts of them after so raised;" other sorts are stamped only. Such as want clipping are then clipped and combined "with the other necessary parts, so as to make the article complete."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 98.]

A.D. 1813, May 22.—N^o 3699.

THACKRAY, JOHN.—“A method of inclosing a seat in a portable stool stick, which seat might be applied to other useful purposes.” The part forming the legs is “a portable tripod stick,” having a metal stay in each limb if necessary, “working upon a triangular rivet or centre, forming itself, when shut up, into an apparent one-round stick,” and stayed with cord at the bottom part, “passing, when open, through and being fastened to each of the opening legs.” The seat is of any fit fabric, bound and strengthened with ferret, leather, or other pliant substance, and fastened to the top ends of the tripod under metal ferrules with rivets, screws, or glue. The seat is caused “to rise up into the form of a cone” by means of a whalebone, wooden, or metal rib hinged or otherwise fastened to any one or to all the limbs. A painted or japanned tube encloses the whole.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 95.]

A.D. 1813, July 14.—N^o 3718.

CLARK, JOHN.—“A method for making or constructing beds, pillows, hammocks, cusheons, and other articles of the like kind, &c.” The case of the article (which is made in the usual manner of tick or other suitable fabric) is rendered impervious to air, is filled with air instead of down or feathers, and is enclosed in another case “of tick, velvet, or any other suitable material.” To make the air-tight composition for the case add eight ounces of spirits of turpentine to one ounce of caoutchouc cut into small pieces. After standing enclosed in a glass vessel for two or three days, or until the caoutchouc is “almost in a state of solution,” throw the whole into an open vessel “containing seventy ounces of linseed oil, and boil it slowly for several hours, stirring it frequently until the composition becomes of a thick glutinous consistency; then let it cool, and filter it through a fine cloth.” When the composition is to be used it must be made rather warm, and the case “must be immersed in it until completely saturated therewith.” The case is then to be extended, exposed to a current of air, and frequently turned to prevent the composition from draining off until dry. “Another covering of the said composition must then be added by means of a flat hair brush. When in this state a circular aperture of about one inch in

“ diameter must be made in any convenient part of the case, and
 “ some of the said composition poured in to cover it internally as
 “ well as externally.” The superfluous composition being then
 poured out, the aperture must be closed by a short metallic tube
 furnished with an air-tight stop-cock. Other coatings of com-
 position are laid on until the case is perfectly air-tight, and
 finally when the case is quite dry, it must be washed in clean
 water.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 2 $\frac{1}{2}$ (*second series*),
 p. 157; Rolls Chapel Reports, 8th Report, p. 97.]

A.D. 1813, November 1.—N^o 3744.

JAMES, SAMUEL.—“ A sofa or machine for the ease of invalids
 “ and others.” The sofa frame is composed of three moveable
 portions, viz., a back part, a thigh part, and a leg part; these are
 raised and lowered by means of racks which turn on a spindle on
 each side of “ a cross bar framed into the sides of the sofa.” The
 back part is thirty-six inches long; the thigh part sixteen, which
 “ may be shortened to ten inches by shifting a sliding bolt;” and
 the leg part nineteen. The width of each is twenty-six inches.
 The upper rack “ must be the fourth part of a circle of thirty
 “ inches diameter, and the lower one (for the thigh) a fifth part
 “ of a circle of twenty inches diameter.” There are the proper
 “ axles with wheels and cogs” for working the racks, and
 “ spindle with the check wheel to keep the parts at any degree of
 “ elevation,” also a “ winch to turn the axles and wheels; the
 “ bent part must be twelve inches,” and levers to raise the catch
 out of the check wheel. The sofa legs “ must be thirteen and an
 “ half inches high to give room for the racks to pass underneath.”

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 103.]

A.D. 1814, March 12.—N^o 3787. (* *)

HASLEWOOD, ROGER.—“ The patent folding screen is formed
 “ by any number of plates of flat surfaces of metal or any other
 “ material, more than one in number, suspended from the various
 “ diameters of the circumference of a pullie or roller having
 “ various diameters, and counterpoised by a power equal to the
 “ weight of the said plates, the result of which arrangement of
 “ parts is that when any one of said plates is moved by a force ap-
 “ plied upwards or downwards, the whole number will ascend or

"descend in such proportions of motion as the various diameters produce."

[Printed, *ed.* No Drawings. See Repertory of Arts, vol. 25 (*second series*), p. 324; Rolls Chapel Reports, 8th Report, p. 102.]

A.D. 1814, July 26.—N^o 3827.

DONCASTER, WILLIAM.—"A dining table upon an improved principle." These words form the close of a title which claims improvements in the construction and propulsion of vessels, and in the propulsion of carriages and machinery. The means employed for propulsion are "the hydrostatic bellows or pump" and "hydraulic engines" which "may be worked by wind or otherwise." The reader is referred for a description of the vessels and engines to the series entitled Hydraulics, where the invention will be found abridged in its proper order. The information given respecting the dining table is extremely scanty. Three drawings "give different views of the cabin dining table, intended to render every one independent in himself, and not taking up the time of the ship's company from their duties;" one drawing "shews the rotary part of it" turning on a pin; a second, shews the table "as spread out;" and a third "as again closed." A portion of the table top is moveable; underneath is a case containing flaps or surfaces which are raised (telescope fashion) by the pin; the pin is actuated (it is presumed) by the hydrostatic bellows.

[Printed, *ed.* Drawing. See Rolls Chapel Reports, 8th Report, p. 106.]

A.D. 1815, March 14.—N^o 3893.

BEVERIDGE, ELIZABETH.—"An improved bedstead." The first improvement consists of a new method of attaching the bed posts to the frame. The corners of the frame are cut off in order to fit into corresponding recesses in the posts; they are joined by thumb screws. The second consists in employing in place of a curtain rod a metal tube, nailed, screwed, or otherwise fastened to the tester lath; in the lower part of the tube is a groove along which hooks slide, having knobs on their tops.

[Printed, *ed.* Drawing. See Rolls Chapel Reports, 8th Report, p. 104.]

A.D. 1815, April 27.—N^o 3910.

WILSON, JACOB.—"Improvements in bedsteads and bed furniture." The bedstead is made without pillars at the

corners, which are "round, canted, hollow, or elliptic," and with screw legs. The tester frame is supported on a pillar or pillars, scroll or scrolls, &c. of any material at or near the middle of the foot and head rail, or at or near the middle of the foot rail and each corner of the head rail; or it may be supported only by a bracket or scroll at the head of the bedstead. In order to make the bedstead "lighter, or diversify the same," the tester, foot pillars, &c. are dispensed with, and a portable dome or head is employed; a stile is fixed "to the head pillar with a stud and "plate, or a screw;" a slide (one or more) is attached to the stile "in any shape or form most suitable," and to the slide a block "with ribs attached to other ribs hing'd to a block fixed to the stile." The stile, ribs, blocks, &c. may be of any material, and the dome can be applied to a sofa, sofa-bed, chair, or chair-bed.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 166.]

A.D. 1816, January 23.—N^o 3976.

BARRON, JAMES.—"An improvement or improvements on "castors." This invention "consists in the manner of more "firmly than usual securing the fixing of the pivot to the "bottom of the socket, box, or plate of the castor, and in "lessening the friction between the horn or claw and the socket "of socket castors, the box of claw castors, and the plate of "plate castors of all descriptions." The pivot is formed with a projecting rim, against which "the bottom is rivetted or otherwise fastened." The under side of this rim "forms one of the "bearings against which the top of the horn acts." To lessen the friction a sunk or hollow space is made "between two distinct bearings or rims, the rim of the pivot being one, and the "outer rim (either on the bottom of the socket box or plate, or "on the top of the horn or claw) being the other." If the top of the horns is brass, the parts at the bottom of the plate, which the horns work against, are made "of iron or other metal which has "not a tendency of adhering to brass," and vice versa. The drawing shews the invention applied to "a round socket," "a square socket," "a common socket," and a "claw" castor; there is also a drawing of "a section of a socket differently made," the outside rim being "left raised in turning the bottom of the socket;" the top of the horns is of brass with a rim or plate of iron or steel

let in and fixed even with the top ; the iron or steel plate may be made with a " raised rim."

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 111.]

A.D. 1816, March 23.—N^o 4000.

PAULY, SAMUEL JEAN.—" An article or substance for making " without seams coats, great coats, waistcoats, habits, cloaks, " pantaloons, mantles, stockings, socks, and any other kind of " clothing, covers for umbrellas, and for hats; and mattresses, " seats, and cushions filled with atmospheric air." The substance employed is " the peritoneal coat, membrane, or covering " of the coecum or blind gut of animals," that of the larger animals being preferred ; it may be used " immediately it is taken " from the animals, or dried until wanted," when " it is to be " soaked in water until rendered sufficiently soft and pliant to be " extended." It is to be placed wet " upon a model or figure of " the shape and size of the article or thing required, and as " many skins are to be employed as are necessary to complete " the requisite size ; " these are joined together " by laying the " edges of the one a little over the edges of the other," and it will be found that as they dry, " they become by their glutinous " nature united and consolidated ; " a small quantity of glue previously dissolved in the water " will increase their adhesion." When the skins are perfectly dry " the whole is to be varnished " inside and outside with any varnish fit for oilskin." The patentee prefers using the varnish called " Mr. Frederick Moller-stein's composition ; " this, however, he first reduces " to a " fluid liquor of the substance of paint by being boiled with a " sufficient quantity of linseed oil," and, when cold, he lays it on with the hand.

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 111.]

A.D. 1816, March 23.—N^o 4008.

STEINHAUSER, JOHN LEBERECHE.—" A new or improved " castor or roller for tables, sofas, bedsteads, and other articles." This improvement is produced by applying three or more small rollers between the socket of the castor and the spindle of the horns " for the purpose of reducing the friction between those " working parts." The rollers are placed in a cavity or cavities

in the lower part of the socket; they are set in an inclined position to the perpendicular direction in which the weight acts upon the castor, and a portion of the spindle is made "taper or conical to the same angle of inclination," so that the weight of the article to which the castor is attached is brought to act upon the spindle through the means of the rollers. If the castor is made without a socket, the part containing the rollers is fastened to the under side of a top flat plate, and the spindle is perforated and attached to the plate by a pin. The rollers can be set at "any angle of obliquity or quantity of inclination or bevel according to the circumstances of the incumbent weight of the article to which the castor is to be applied, or the freedom with which the castor is required to act." The following arrangement is "the most effectual in practice in cases where the load and friction is the greatest:"—The spindle is made with "a flanch which is square or at right angles to its axis," and on a part of the upper surface thereof the rollers work; the horns are "of such form and figure as may bring the perpendicular pressure or weight or bearing of the load on the castor one quarter and one-sixteenth of an inch distant from the centre of the wheel," a little more or less.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 111.]

A.D. 1817, June 3.—N^o 4132.

DAY, BENJAMIN AGER.—"Improvements in chimney ornaments, which said chimney ornaments are so constructed that they may be used for fire screens, flower or scent jars, time-piece cases, candlesticks, toast stands, and various other purposes." The first part of this invention is the concealing of a folding fire screen, when not in use, in a box or tube, and the attaching the same to a sliding pole or stand, so as to give it the appearance of a chimney ornament, or to any description of stand. The box is composed of six pieces of metal; a bottom which can be secured to a stand by a tang or screw, a middle plate soldered at one end across the middle of the bottom, two outside plates forming the front and back soldered or otherwise fastened on each edge of the bottom and middle plate, and two sides or doors secured by springs or bolts. The screen, which is made of any material "that will answer the purpose when printed," is sewed or otherwise fastened "to the top or end of the middle plate,"

and "the other end of the plate to which the screen is attached is "screwed or fastened in the case by the small tang proceeding "therefrom being placed in a hole for the purpose in the bottom." The patentee details three modifications of the above. On the top of the box may be placed a candlestick composed of three pieces of metal "forming a triangle stand to work upon a centre "pin," whereto a socket is screwed or rivetted; "this triangle, "being brought into the form of a fork by placing two of the "points in a line, may then be placed on the top of the box." A second part is a frame which opens to receive a fire screen, and which can be attached to a sliding or any other stand. The back and front are made each of four (more or less) pieces of metal soldered or rivetted together; they are connected by hinges and fastened by a spring. A strip of metal soldered between the sides "forms the edge, which leaves an opening to receive the fire "screen." A third part is an article which may "be placed on "the edge of a fender and used as a toast stand;" it consists of a rim and centre or rim only, three legs, a lip soldered or rivetted to the bottom of the rim, and a stretcher having a hole at each end whereby it is placed on two of the legs opposite the lip. Two nuts form the bottom of these two legs and serve to secure the stretcher in its place. The stand may be fixed on the fender by a hook, one part of which serves as a lip, the other as a bearer. A fourth part is an improvement in constructing chimney ornaments "by striking them in various forms and "sizes in one or more part or parts in a die or dies;" these ornaments are to represent Gothic or Grecian architecture; they are hollow, and inside are fixed sockets, tubes, &c., wherein are placed candlesticks or screens.

[Printed, 8d. Drawing. See Rolls Chapel Reports, 8th Report, p. 120.]

A.D. 1818, December 10.—N^o 4320.

BARRON, JAMES.—"An improvement in the making and fixing "of knobs generally used on drawers, doors, and cabinet furniture, "and known by the names of drawer and mortice furniture "knobs or handles." The improvement in drawer knobs "consists "in the method of fixing them more firmly than usual by "preventing them from being turned round on the outside of "the drawer when once fixed," also in "the method of making "the wood centers which are to be used with the said knobs."

The cup and rose are united "by an iron washer being put in " each of them and rivetted fast together inside the cup." The bottom of the washer in the rose is tapped to receive a screw; it is made square "or the squares may be fluted on each side to " fit a little way into the drawer front;" it may, however, be of any other shape that will answer the purpose "of preventing the " knob from turning round." The washer has on it a small projection "to prevent the screw from drawing it too far into " the wood." The wood centre "is turned the size of the " cup;" it is fixed thereto by means of a brass rim which wraps over the edge of the centre "and is turned over the edge of the " cup in the same manner as the brass fronts are usually fastened." The screw is put in from the inside of the drawer. In a "brass " mortice furniture knob," the spindle which passes up the body is tapped at top and secured by a nut. The wood centre is made in two parts; the under part, "of any plain wood," has fixed in its middle "a brass nut made in a taper form," which screws on to the top of the spindle; the front part "of ornamental wood" is glued on the under part "crossways of " the grain" to prevent the wood "from casting" and to keep the nut firm in its place. Wood centres may be used with these knobs "in the same manner as specified in the drawer knobs " when the spindle and cup are made and fixed in the usual " way."

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 180.]

A.D. 1823, April 22.—N^o 4786.

RAWLINS, JAMES.—"A bedstead, machine, or apparatus for " the relief of invalides." The bedstead and its appurtenances are so constructed that "the patient can be raised and the bed " made without inconvenience to him," and "the upper part of " the body and the lower limbs can be raised and supported in " various positions." The frame of the bedstead is longer than usual; the posts "are all alike and are turned with a shoulder at " the top, on which the frame of the tester rests;" and the tester frame is made with or without a smaller one above it, "and sufficiently broad to admit the curtain rods to project so far beyond " the posts as that the curtains may draw round the bed free from " the bed clothes." The curtain rods are of hollow brass, and " the ends pass each other a few inches so that the curtains may

"fold over each other." Above the bedstead frame is a moveable wooden frame suspended from block pulleys by ropes; it has a sacking bottom tightened by cords, and in the middle of the sacking is a circular hole for the introduction of a bed-pan; it is less in size than the bedstead frame, "to admit its passing freely "up and down between the head and footboards and the posts;" but the breadth may be enlarged by notching it at the corners to free it from the posts. Hinged to the moveable frame, and "bedded in it so as to be on a level with it," are a head and foot frame, each having a sacking bottom; the head frame has a head board, the upper part of which "falls back and is supported in any "inclined position by a brass screw quadrant," and on each side is "a solid upright cheek." The head frame is raised "by one or "more ropes fixed at the back, which are conveyed over a block pulley fastened to a bar across the middle of the tester frame; "when raised it is supported by the swing bracket fixed to it "beneath." The foot frame carries a footboard, the upper part of which "falls back and is supported in an upright position by "a hook and eye; this frame is raised on its hinges by a hand "hole cut in its footboard, and when raised up is supported by a "swing bracket beneath;" and "about eight or nine inches below "the hinges of this frame is another joint," supported in its elevation "by the projecting ends of the sides of the frame dropping into the racks" of the moveable frame. The mattress is jointed to correspond with the joints of the frames, and it has a hole in it corresponding to the hole in the sacking; the hole is filled by a cushion. Beneath the sacking of the bedstead is a spindle of the same length as the bedstead; it carries a roller at each end, and at the head rail "a rotch wheel" acted on by a stop; it is turned at either end by a shifting handle. On each roller are fixed two staples for the attachment of the ropes which support the moveable frame; and at each corner beneath the sacking and at the top of each post is a block pulley; there are also four block pulleys above the moveable frame. "The mode "of fixing the tackle with these block pulleys is called in nautical "language a Burton whip." The arrangement of the pulleys is such that the ropes work perpendicularly. The spindle may be fixed across the bedstead to the side rails. To turn and support the patient on his side "a loose folding frame is occasionally used, "the lower leaf of which has two racks, and to the upper leaf is "fastened a swing bracket." Two brass pins drop into holes

sunk in the sides of the moveable frame; they "stand up about one inch and a half, and against them the folding frame presses."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 7, p. 242; Register of Arts and Sciences, vol. 1, p. 33; Engineers' and Mechanics' Encyclopædia, vol. 1, p. 161.]

A.D. 1823, August 11.—N^o 4828.

BARRON, JAMES, and WILSON, JACOB.—"Improvements in the construction and manufacturing of window blinds." The improvements are applicable to outside Venetian blinds which are "quickly changed to answer as a bonnet or projecting blind," to outside spring, and to cogged roller blinds. The fan of the first is composed of taper laths with a round hole at the top to admit of a socket which turns on a pin. Both pin and socket pass through a plate, and the pin screws into a socket and plate screwed to the wall lining. The first plate is fixed "on an inner lining, a sufficient distance from the wall lining to allow space for the fan when shut up." About three inches from the lower ends of the laths are grooves, two in the one next to the wall casing and one in each of the others. These grooves are for studs and screws to slide in; the first lath is secured to the wall lining at the top groove by a screw on which the lath slides; to the second lath by a stud and rivet; the second to the third in like manner; and so on to the last one, which slides on a screw at the back of the casing that comes next the blind. The expanding rod is fixed by a plate at each end "to the opposite linings next the blind, and directly under the bottom lath when down." When the fans are extended, they "are secured in that position by the outside linings, forming a shoulder or butt joint against a shoulder in a rule joint, as likewise by hinges made right and left." The improvement in outside spring blinds consists in a readier method of charging the spring and keeping the blind more out of the way." The spring being fixed to the rod in the usual manner, a centre plate, having a half-inch square hole in it, admits the end of the rod and is then "turned with a forked screw driver" on a square plate, "which is screwed to the end of the box that contains the blind." The rod is made of hollow tubing, "one length hinged in the middle at each end of the blind, and if the blind is very large, one or more between them." The rods are supported by iron boxes "which answer as brackets."

A taper ferrule formed with a shoulder slides on the rod and secures it when in its place by entering a hole in a plate screwed to the iron box; a bar prevents the rod from going too high. Cogged roller blinds are improved by "diminishing the quantity of line and the space usually taken by it." This is done by means of "a stamped cap" strengthened by an iron washer and fixed to a "casting;" the whole is attached to a spindle by a screw "and flanch;" plaited line is used of sufficient length to draw the blind up, "and a common-sized line below;" they are fastened together by a union screw.

[Printed, 10*d*. Drawing. See Repertory of Arts, vol. 8 (*third series*), p. 449; London Journal (*Newton's*), vol. 8, p. 14.]

A.D. 1823, December 9.—N^o 4878.

HORNE, THOMAS, the younger.—"Improvements in the manufacture of rack pullies in brass or other metals." The racks are "made out of sheet or rolled metal in one piece without being connected in two parts, with level or smooth backs." An ingot of metal is rolled "into strips of about the thickness of one-eighth of an inch;" and the strips are passed between a pair of rollers, "the upper one being smooth, the lower one with an indented groove, or vice versa." This process forms steps or notches at certain distances up the middle. "The extreme form of the rack pulley plate" is next cut out by means of a cutting press; and, lastly, the edges are turned over upon a mandril. A similar article may be produced "by means of a stamping or pressing apparatus."

[Printed, 8*d*. Drawing. See London Journal (*Newton's*), vol. 8, p. 76.]

A.D. 1824, June 15.—N^o 4973.

DAY, BENJAMIN AGER.—"Improvements in the manufacturing of drawer, door, and lock knobs, and knobs of every description." One part of the invention consists in making knobs "in two or more parts in wrought or cast iron or any other substance or material which will answer the purpose," and afterwards casing the separate parts with sheet or thin brass or metal of any other kind; it relates also to casing with brass or other metal knobs "made in one part only" and their roses. The separate parts are stamped or pressed in dies while the iron is hot; the

roses are stamped or pressed from sheet iron when cold. The casing is affixed "by turning the edges thereof over the iron;" the cups and roses are fastened together by passing a shank through their middle, and "the ornamental shell of metal" with which the knobs are covered when put together is turned over in the usual way. Another part "is for setting a ring of stamp " or cast brass, or any other description of metal, round the edge " of the drawer, door, and lock knobs which are made of ebony " or any other kind of wood." The socket, "which is introduced " into the ebony or other wood lock knob to receive the spindle of " the lock," is occasionally made "to come through the wood" and is fastened by a screw, nut, rivet, &c., and the shank is made "to come through and fasten in the same way."

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 9, p. 249; Register of Arts and Sciences, vol. 2, p. 298.]

A.D. 1825, May 14.—N^o 5162.

PRATT, SAMUEL.—"An improved manner of combining wood " and metal, so as to form rails or rods adapted for the manu- " facture of bedsteads, cornices, and other works whose strength " and lightness are desirable, which he denominates 'union or " 'compound rods.'" A three-ribbed or three-leaved bar of iron or any other suitable metal is inserted throughout the whole length of a wooden rod. The rod is prepared by sawing it into three sectors and cutting grooves therein "exactly fitted for and " ready to receive the three-ribbed bar;" or one sector only need be sawn out. The bar is placed in the groove and the edges of the rod are glued together. If increase of strength be required, an external tube of brass or turned iron or other fit metal is drawn or driven tightly over the rod; or hoops of metal may be employed instead of a tube. Thin external tubes are sometimes used for ornament. The rod is varied in shape according to circumstances. The bars are sometimes made in two parts and joined together by screws, rivets, soldering, brazing, &c.; smaller sizes "may be drawn into shape in the manner of forming pinion wire;" but for larger ones the patentee prefers rolling iron in a hot state between a pair of suitable rollers "mounted in close " contact on their respective gudgeons adjustable in the usual " manner of rolling mills."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 11, p. 183.]

A.D. 1825, August 11.—N° 5237.

PERKINS, JACOB. — (*A communication.*) — “Improvements in the construction of bedsteads, sofas, and other similar articles.” This invention consists in the application of racks and catches to bedsteads “for the purpose of securing the several parts together by tightening up the sacking.” A rack of brass or other metal “made in one piece, so as to form at the same time a collar, socket, and plug,” and having in it one or more holes “into which a lever is inserted in order to tighten up the sacking,” is attached to each end of the side and end pieces of the bed frame, and a catch to act on the rack is screwed to each of the inner sides of the bedposts. The plug fits into a hole drilled in the bedpost; and cross bars are cast in the same piece as the socket and collar, and “are let into the woodwork, in order to prevent the one from turning round without the other when the lever is applied.” A series of studs “are placed the whole length of the side and end pieces on which to attach the sacking.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 3 (*third series*), p. 249; London Journal (*Newton's*), vol. 13, p. 256.]

A.D. 1825, November 26.—N° 5299.

TOMLINSON, RICHARD JONES.—“An improved framework for bedsteads and other purposes.” The frame is of metal and composed of four curved bars thickened at the ends for receiving screws. A straight tension bar is rivetted to each curved bar; the sacking is laced to the straight bars, and the pull is transferred to the curved bars by means of brackets or cross bars. Instead of sacking a series of iron hoops or rods, fastened at their middle to a long hoop, may be used. The cross hoops are turned at their ends and catch on the side tension bars; the long hoop is screwed to the end curved bars.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 13, p. 322; Register of Arts and Sciences, vol. 2 (*new series*), p. 55.]

A.D. 1826, May 26.—N° 5374.

FERNANDEZ, JAMES BARLOW. — “Improvements in the construction of blinds or shades for windows or other purposes.” The patentee claims the invention of, 1, elongating and contracting supports to blinds; 2, a contrivance “for remov-

"ing the shade, &c. without taking down the case or drawing "screws;" 3, a slide to raise or lower the blind; and 4, an improved cap and fastening for the roller. The first consists of cross pieces of metal or suitable material connected in the middle and ends by studs or otherwise. The second is constructed thus:—In the pulley lath are dovetailed grooves with holes drilled in the middle; through these holes screws pass freely into the top of the case; a slide fits into each groove, and by driving it home "the lath will become firmly fixed." 3. To the slide are fastened two friction wheels; it moves in a groove on the inside or other convenient part of the case, and is raised or lowered by means of the cord which is attached to its top. 4. The cap is composed of a socket, roller axle, ratchet wheel, spiral spring within the socket, and a metal plate affixed to its spring. The fastening consists of a case and a rest for the axle. When the blind is to be put up the rest "is pushed back and the axle is placed in the case; and "then the rest being let go, a spring forces it forward and "prevents the blind from falling."

[Printed, 10d. Drawing. See Repertory of Arts, vol. 4 (*third series*), p. 195; London Journal (*Newton's*), vol. 14, p. 199; Mechanics' Magazine, vol. 7, p. 72.]

A.D. 1826, August 17.—N^o 5403.

THOMPSON, JOHN THOMAS.—"Improvements in making "or manufacturing metallic tubes, whereby strength and "lightness are obtained, and for applying them, with various "other improvements, to the constructing of the metallic tube "and other bedsteads." These improved tubes are made by the insertion of other tubes of such shape "as may be best adapted to "the required purpose." The outer tube is formed over the inner one, or the inner is introduced and driven into the outer. The legs, pillars, sides, and ends of the bedsteads are united by the following "newly invented locking joints." Into the end rails are fixed cleft pieces; the side rails are joined to the cleft pieces by tongues turning upon pins; the legs and pillars are also connected to the cleft pieces by pins "upon which their arms "turn." In each cleft piece is a square aperture, and in each tongue a corresponding one "open on one side." A circular wedge is formed on each pillar and leg; the two wedges fill up the apertures. The wedge of the leg is first introduced, and the wedge of the pillar being thrust in locks the whole firmly together.

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There is a ridge formed on the back of the tongue and a corresponding gap on the outer side of the leg wedge; their use is to prevent the legs from turning inwards. The tester is applied to the head and foot pillars by means of squares, holes, and knobs; the cross rods are attached by pivots or studs at one end and hooks at the other. The sacking is secured as follows:—Metal rods are connected to the side rails by double rings; a series of rings are hung on the rods; each ring has affixed to it a bent metal plate drilled with holes to receive the thread passed repeatedly through the sacking lying between. The sacking is strained lengthways by straps and buckles or other methods. Metallic tube bedsteads may be made to expand telescope fashion furnished with stops, keys, pins, &c. The larger or outer tubes have legs or supports at each end, the others legs at their front ends only.

[Printed, 10*d.* Drawing. See Repertory of Arts, vol. 5 (*third series*), pp. 107 and 251; London Journal (*Newton's*), vol. 14, p. 328.]

A.D. 1826, August 31.—N^o 5410.

DAY, WILLIAM. — “Improvements on bedsteads, which improvements are also applicable to other purposes.” Bedsteads constructed according to this invention can be extended or contracted in width, and the posts can be increased or diminished in height. This change is effected by making the top and end rails of the frame, the stretchers, the top and end rails of the tester, and the posts, each of two tubes, one capable of sliding within the other; the sliding tube is retained in its situation by a spring catch. There are three legs at each end mounted on castors; the outer ones screw into the lower ends of the pillars after passing through square holes in the side and end rails; the middle ones screw through the two tubes which form the rails. The broad piece of the sacking is made to fold and is provided with an additional set of holes to be used when the bedstead is contracted. The tubes can be made in three or more parts, sliding like a telescope; a cloth lining, a covering of elastic worsted cord, and collars, prevent the inner tubes from scratching or shaking, and steady their movement. A couch or sofa-bed is made on the same principle; instead, however, of the fold in the sacking, a metal rod is extended across and enclosed and stitched within it; “the extra part of the sacking folds and lies under or over the fixed part forming the seat.” A back rail is affixed to the

two hind pillars and to a middle pillar. Instead of the tubes sliding within or upon each other, they may be united in various ways, many of which are described in the Specification. A stretcher bedstead is made to vary in width by employing longer or shorter rods wherewith to connect the end rails. Or the cross may be always at the same angle, and the frame may be extended by sliding tubes or rods fitted within or upon the fixed part of the crossed legs. A whole or a half tester, provided with sliding tubes and mounted on pillars, can be screwed into the side rails; or the pillars may have attached to their lower ends rings or loops to fit on to the heads of the rails. Various slight modifications of these arrangements are described. The back of a chair can be raised or lowered by being formed of cylindrical metal tubes or wooden bars which slide into as many short tubes affixed to the frame; when the back is raised it is kept in position by spring catches, pins, or other means.

[Printed, 10d. Drawing. See Repertory of Arts, vol. 5 (*third series*), p. 240; London Journal (*Newton's*), vol. 2 (*second series*), p. 329.]

A.D. 1826, October 18.—N^o 5418.

PRATT, SAMUEL. — (*Partly a communication.*) — "Improvements in beds, bedsteads, couches, seats, and other articles of furniture," to be used on ship-board for the prevention of sea sickness. The description given is that of a couch; the cushion, otherwise made in the ordinary manner, is rendered elastic by spiral springs "attached to the webbing within the coverings." The springs are made by twisting metal wire "into the form of an hour-glass, that is, two cones united at their apexes." The couch is secured to a "swinging frame," the upper rim of which is of wrought iron; this is attached by joints to a second rim which is connected by similar joints to standards on the bottom of the frame or stand. Rods join the upper rim to a bar below, on each side of which is a spiral spring held by a bracket that extends from the stand; "or a rim or plate of metal may be placed round the bottom of the apparatus for the springs to bear against."

[Printed, 6d. Drawing. See Repertory of Arts, vol. 6 (*third series*), p. 309; London Journal (*Newton's*), vol. 12, p. 140, and vol. 13, p. 117; Register of Arts and Sciences, vol. 4, p. 408.]

A.D. 1827, April 28.—N^o 5490.

DAWS, ROBERT. — "Improvements on chairs or machines calculated to increase ease and comfort." The chairs are con-

structed in such manner "that the inclination of the backs may be regulated and adjusted to suit" the person sitting or reclining on them. The back is hinged to the seat and sliding arms; a mortise is cut through the side rail, and a tenon descending from the stump or support of the arm slides therein; the tenon is prevented from rising out of the mortise "by a pin passing through a hole in its bottom;" a rack is fitted on to the side rail, and a catch, with a lever attached to it, on to the stump. Both sides of the chair are constructed alike. A similar effect may be produced by drilling holes along the side rails and one in the tenons for a pin to pass through; by causing one part of the arms to slide within the other, and by hinges on the arms or stumps; by pulleys and drums, or by drums only. In constructing a sofa, "the application of the various parts above described is to be reversed;" the arms are hinged to the seat part; the back slides along "the back rail or back framing;" the back is attached to the arms by joints, "and is retained in any position by clicks or catches, or by pins or other contrivances."

[Printed, *ed.* Drawing. See Repertory of Arts, vol. 6 (*third series*), p. 371; London Journal (*Newton's*), vol. 1 (*second series*), p. 88; Register of Arts and Sciences, vol. 2 (*new series*), p. 134.

A.D. 1827, April 28.—N^o 5491.

BREIDENBACK, THOMAS.—"Improvements in certain parts of bedsteads."

[No Specification enrolled. See Register of Arts and Sciences, vol. 3 (*new series*), p. 50.]

A.D. 1827, June 12.—N^o 5506.

EVANS, HUGH, and KING, WILLIAM ROBERT WALE. — "A new table apparatus to promote the ease, comfort, and economy of persons at sea or on nautical excursions." The apparatus is composed of a metal ring and the following appendages:—1, a screw clamp hinged or jointed to it, "by means of which it can be firmly affixed to a table;" 2, two rings hinged to it "which serve when opened out or extended and resting against their stops" to hold a tumbler and decanter; 3, a forked spring also hinged to it "which opens and receives within it the stem of a wine glass;" 4, two branches also hinged to it "which are bent in such a manner" as to retain a knife, a spoon, and two forks. The plate, soup dish, &c. is securely held

in the metal ring either between "four raised parts," one of which "is jointed to a separate arm" or "upon and within the ring itself." When not in use the various parts fold within the ring, and the screw clamp turns up underneath into it. "By merely changing the forms or sizes of the branches or even "increasing the number" the apparatus may be easily adapted to the use of the breakfast or tea table.

[Printed, *ed.* Drawing. See Repertory of Arts, vol. 7 (*third series*), p. 58; London Journal (*Newton's*), vol. 2 (*second series*), p. 338.]

A.D. 1827, August 13.—N° 5537.

DICKINSON, WILLIAM. — "An improved buoyant bed or "mattress," more particularly applicable for a seaman's bed. A quantity of horsehair, wool, or flock is spread equally over a piece of ticking; thin slices of cork are laid on the hair so as to cover the whole surface; another layer of hair, &c. is spread equally over the cork; a second piece of ticking on the top, and the whole is sewed together "by tufting it in the ordinary manner." The sides and ends are completed in the way usually adopted. For a bed for one person the patentee uses about seven pounds weight of hair and about five of cork.

[Printed, *ed.* No Drawings. See Repertory of Arts, vol. 7 (*third series*), p. 332; London Journal (*Newton's*), vol. 2 (*second series*), p. 156.]

A.D. 1827, August 13.—N° 5538.

BREIDENBACH, THOMAS. — "Improvements on bedsteads, "and in manufacturing or forming articles to be applied "to or used in various ways with bedsteads from a material or "materials hitherto unused for such purposes." The material employed is "worked or woven metal wire," wherewith the patentee makes "sackings, testers, bed enclosures, hangings, and "coverings," also head and foot ornaments in lieu of head and foot rails. The object of the invention is to construct bedsteads which will not harbour vermin and will keep out mosquitoes, &c. "As the sewing with metal wire forms a seam which acts as a "hinge," he connects thereby two or more panels made of woven metal wire, "which may alternately be folded one upon "the other, or be extended all round the bedstead, either whole "or in separate parts," and so form an enclosure. When worked instead of woven wire is used, it is "worked in a frame or frames.

"or in a pannel or pannels," which are joined together in the same manner "as worked metal wire usually is."

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 2 (*second series*), p. 159.]

A.D. 1827, August 30.—N° 5547.

COOMBS, BENJAMIN MERRIMAN.—"Improvements on and additions to a pulley machinery and apparatus used and applied for securing, fixing, and moving curtains, rollers, and other blinds." The apparatus for roller blinds, "besides possessing the requisites usually applied to furniture for blinds," has the addition of an "overbalance catch or lever to drop" on the circular rack; this catch is supported on a pin in standards near the top of the rack box, and is worked by a line that passes round a pulley set in standards at the lower end of the same box. An overbalance weight with pin to drop in holes or rack, a wedge or cone, or "a circular wedge to work on a spindle," may be substituted for the catch. In the "rack pulley" there is also an overbalance catch joined to "the slide that fits the frame." Below the pulley is a rose having fastened to it a line, by pulling which the catch is brought out of the rack. The pulley frame may be made with the rack at the back, or on either side, provided that the catch be arranged accordingly. "The same power and principle are calculated to support bed and window curtains."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 2 (*second series*), p. 328.]

A.D. 1827, November 17.—N° 5562.

WALKER, JOHN.—"An improved castor for furniture." The point of the main pin of the castor bears upon a steel cup fitted into the bottom of the socket of the horns; both point and cup are made of hardened steel to render them more durable. A loose cylindrical collar is fitted upon the upper portion of the main pin; it turns upon the pin and acts as a horizontal friction roller against which a circle or portion of a circle, "formed upon and above the horns," presses "so as to keep the bearing of the pin of the castor in the socket perpendicular or nearly so." The collar is prevented from falling by a small pin which is passed through a hole in the main pin, and the main pin is retained in the socket by having round it a groove in which a screw wire or stud fitted securely into the socket acts. Occasionally the collar is made

of one piece with the castor socket; "and in certain instances," says the patentee, "I reverse the main pin, placing it upwards instead of downwards, the principles of its construction and action being however exactly the same in other respects." The castors are made of any fit and proper metal or combination of metals.

[Printed, 8d. Drawing. See Repertory of Arts, vol. 8 (*third series*), p. 13; London Journal (*Newton's*), vol. 4 (*second series*), p. 330.]

A.D. 1827, December 4.—N^o 5573.

WINFIELD, ROBERT WALTER.—"An improvement or improvements in tubes or rods produced by a new method or methods of manufacturing, or by a new method or methods of manufacturing and in the construction, or in the construction only, and for manufacturing the same with various other improvements into parts of bedsteads and other articles." These tubes or rods "may be constructed in various ways;" several examples are given in the drawing and described in the specification, but all are on one principle. An external metal tube, which may be formed of "one or more concentric layers of metal" or compositions of metals," encloses two or more segments of wood kept "from sliding upon each other longitudinally" by a number of wooden or metal pins "answering the purpose of dowels" between the different surfaces in contact. Another tube or rod of metal or a metal bar is inserted into a longitudinal hole made in the middle of the wood. "Solid or hollow screws" can be formed "upon or within the ends" of the internal tubes or rods, or "externally or internally along their entire lengths." The external tube or case may be of any shape, the segments being made to correspond. For a bedstead a metal rod or bar is passed through the middle of the pillar and of the foot; the ends are formed into screws which enter screwed holes made in the rails, testers, &c. "The head, foot, and side rails cased with metal in the manner above described may be united with the posts by means of solid and hollow dovetails with stops to them." These compound rods with male or female screws at the ends of the internal rods can be used for curtain rods, French pulley rods, cornice poles, and balustrades.

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 6 (*second series*), p. 337.]

A.D. 1827, December 13.—N^o 5584.

GEITHNER, FREDERICK BENJAMIN. — "Improvements on castors for furniture and other useful purposes." The pivot or pin is made "with a circular shoulder or segment of a ball to work in a corresponding cup or segment of a circle sunk in the top of the horn or claw, and made of wrought or cast iron, steel, copper, brass, tin, or any other metal or composition of metals applicable to the purpose, large enough to give the horn or claw a sufficient bearing without the assistance and quite independent of the bottom of the socket into which the said pivot or pin is firmly rivetted or otherwise fastened." Sometimes the patentee reverses the form of the pivot and fastens it to the horns, sinking the cup or concavity into the socket; by either arrangement "a more regular or steady movement or action" is obtained for the pivot, "the circular or ball bearing being separate and perfectly true and centrically finished."

[Printed, 6d. Drawing. See Repertory of Arts, vol. 8 (*third series*), p. 79; London Journal (*Newton's*), vol. 6 (*second series*), p. 331.]

A.D. 1828, January 15.—N^o 5605.

NEWTON, WILLIAM.—(*A communication.*) — "An improved surgical chair bed with various appendages." This chair bed is "designed for sick persons that may be deprived of the power of moving, or for wounded or other persons that require careful attention or surgical treatment." The bedstead "is transversely divided into three parts," which are attached to an external frame. The part of the framework for the feet "is capable of descending and being moved perpendicularly" by racks. The part in the middle "is immoveable and serves as a seat." The part for the head "may be raised by a toothed segment," so that the bedstead may take "the form of an arm chair." The panel at the foot of the bedstead can be turned down and form "a step to assist the invalid in getting off the bed." A mattress (in two parts) is placed on each of the end frames, and on the middle frame "a close stool box is placed with a mattress above it." The mechanism for raising and lowering the head and foot frames is of the customary kind, and is fully detailed, as well as sundry modifications and substitutes for certain portions thereof. The sacking is distended, raised, or lowered by "ascending racks," to the top of which "two lateral shafts are affixed." The head frame "may be made fast," and various moveable frames (all described at

length) may be substituted. The appendages are, 1, a pair of drawers or breeches to be secured about the person of the invalid ; and "the bottom of the close stool seat" may be adapted "to the tube or opening of the close stool channel of the drawers." 2. Suspension slips, which allow the patient "to be raised and placed in any position he might desire." 3. The moveable frames before mentioned. 4. A "suspended bed, which is especially designed for the purpose of enabling a sick person to be lifted up and placed in the arm-chair bed, or to transport him from one bed to another." This can be applied to an ordinary bedstead, and the modes of constructing it are explained in the Specification.

[Printed, 1s. 8d. Drawings. See London Journal (*Newton's*), vol. 3 (*second series*), p. 156 ; Rolls Chapel Report, 7th Report, p. 127.]

A.D. 1828, June 25.—N^o 5668.

PRATT, SAMUEL.—"Improvements on elastic beds, cushions, seats, pads, and other articles of that kind." Wire springs, twisted into circular or angular coils, "in the shape of an hour glass," are fastened by sewing or otherwise between two sheets of canvas or other substance which is strengthened by ribs of whalebone, cane, or other elastic material sewed round the edges and across. The springs are "further confined by pack-thread or other small string tied to the top coils, and extended diagonally from one to the other, bracing them all together." The overhanging edges of the lower sheet are sewed to the top one, and the flaps of the top one to the edges of the bottom one, enclosing the springs as if in a box. The internal part being thus constructed is padded on the outside with the ordinary elastic materials, and the ticking or covering completes the bed or cushion. In small cushions and pillars one-half of each spring is sometimes passed through the foundation sheet which is sewed to the two middle coils. The outer coils are then tied together as above ; a sheet of canvas covers the whole and is sewed to the outer coils ; the seams are fastened, and the necessary padding, &c. is put on.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 2 (*second series*), p. 274 ; Rolls Chapel Reports, 7th Report, p. 127.]

A.D. 1828, August 28.—N^o 5691.

DAY, BENJAMIN AGEK.—"Invention or improvement in the manufacturing of picture frames in various ways, forms, and

" sizes." The first part of this invention consists in making picture frames of any description of metal or compositions of metals, and in "japanning, lackering, or staining the same of various colours;" the frames are stamped in one or more parts in dies prepared for the purpose, and, if they are stamped in more parts than one, the parts are soldered or otherwise fastened together. The second part consists in "making the ornamental squares, or those parts which receive the glass," to represent "Gothic or Grecian architecture;" and as the patentee does not confine himself "to making a true square," he occasionally forms them "with round or circular tops." The third part "is an improvement on the japanned paper picture frames by adding thereto the ornamental squares or frames to represent Gothic or Grecian architecture."

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 5 (second series), p. 275.]

A.D. 1828, September 11.—N° 5700.

MINIKEN, THOMAS.—"An improvement in the construction, making, or manufacturing of chairs, sofas, lounges, beds, and all other articles of furniture for similar purposes, and also of travelling and other carriages, and vehicles of every description for personal use." The back of the chair turns on a socket hinge; it has on each side a rail, the front of which is a segment of a circle similar to a segment at the back of the fixed arm; a spring click (with a friction roller at its end) at the back of the arm works in a rack on the front of the rail. In front of the chair frame is a jambier strongly hinged thereto; the jambier is provided with a footboard which slides along it in grooves by means of a spring secured at top to the former and at bottom to the latter. The simultaneous movement of the back and jambier is caused by a lever and crank apparatus. The lower end of a bar (firmly fastened to the two back rails of the chair) is pivoted to the hind end of a "main conducting piece," the other end of which is kept in its place by a forked bar screwed to the front of the frame. In the main piece is a slot in which slides a pin (carrying a friction roller and mounted in the forks), "to support it in the whole length of its action." A balance bar, pivoted at one end to the first-mentioned bar and forked at the other end, allows "of the action upwards of the main piece." Two small

bars, pivoted (one on each side) to the main piece and the balance bar, and a catch, fastened to the lower side of the jambier and working in a rack near the front end of the main piece, complete the machinery "by which the motion of the back and jambier is "made to depend each on the other." The sitter makes the fixed arms "his point of resistance," and thereby forces back the chair back and brings up the jambier to a corresponding height. The same construction is applicable to all the articles in the title.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 7 (*second series*), p. 80.]

A.D. 1829, January 14.—N^o 5753.

DEAKIN, JAMES, and DEAKIN, THOMAS.—"Methods for "making from horns and hoofs of animals various articles, "namely, handles of knives and knobs of drawers, and other parts "of cabinet and household articles, curtain rings, bell pulls, door "handles, and knobs, key hole escutcheons or coverings, and "door and window shutter finger plates, knobs, and handles, all "or any of which articles were and are to be so made of one or "more piece or pieces of horn or hoof of any shape or device, "plain or ornamented or inlaid, conjoined with any kind of metal "or other material." If the article is to be made of a ring shape and of one piece, a metal die, or a die consisting of two parts, is employed, in which is sunk or cut a groove. At one end of the die a projection is to be left, and at the other end a corresponding hollow is to be made "in form of a dovetail or "countersunk catch." A strip of horn or hoof is to be placed in the die, "both having been previously moderately heated," and, being submitted to the pressing vice, a ring or curve is formed, having the two ends disunited, but with a projection impressed on one and a hollow dovetail on the other. The projection is then inserted in the hollow, the whole is placed in another die, and the ring is completed by another application to the vice. To join two pieces of horn or hoof together to form one article, one piece, having been previously boiled in water or heated, is to be pressed into any form required, "and in the "same piece of horn or hoof is made or left by the die and "afterwards turned in a lathe," or worked by hand, one or more hollows "made wider at the bottom than at the aperture." Another piece is pressed in another die, and has a corresponding projection or projections left thereon; these are inserted in the hollows, and a junction is effected by pressure in another heated

die. Three or more pieces are to be united by a similar process. In making door knobs and handles "which require metal linings" to receive metal shanks," before the two or more parts of which they may be composed are united, "a hole is to be made" in or through the shank of such knob or handle, or the part "thereof where required large enough to admit of a piece of metal" tube or lining" in or through which is "a square, triangular, or other hole, having some one or more angular side or sides" or some catch or catches." The parts are then to be put together and placed in the finishing pressing die, and the whole is firmly united "by pressing the horn or hoof round and upon the metal tube." All the articles "may be inlaid or conjoined" with any kind of metal or other material for the purposes of "outward ornament."

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 8 (*third series*), p. 540; London Journal (*Newton's*), vol. 6 (*second series*), p. 339.]

A.D. 1830, November 9.—N^o 6034.

MINTER, GEORGE.—"An improvement in the constructing, making, or manufacturing of chairs, which I intend to denominate Minter's patent reclining chair." The hind legs rise above the seat, and the back is suspended between them by pins, one on each side; "these pins pass through the outer framing of the back, and screw into a nut or plate" fixed to the legs. An iron plate, "turned up at right angles," is screwed to each side framing of the back, and curves are cut "on the under side of the ends of the side framing of the seat;" these curved parts rest on the turned up parts of the plates. The seat is hinged to the front rail. When the sitter presses against the back, the part above the point of suspension will be forced backwards, and the part below will be raised inwards, lifting at the same time the back of the seat.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 12 (*third series*), p. 68, and vol. 2 (*new series*), pp. 80 and 354, and vol. 4 (*new series*), p. 83; London Journal (*Newton's*), vol. 7 (*second series*), p. 150, vol. 6 (*conjoined series*), p. 360, and vol. 10 (*conjoined series*), p. 177; Mechanics' Magazine, vol. 15, p. 22; Register of Arts and Sciences, vol. 5 (*new series*), p. 274; Webster's Reports, vol. 1, pp. 126, 127, 134, 135, 138, 142; Webster's Patent Law, pp. 47, 49, 77, 78, 80 (also p. 134, case 106, p. 136, case 112, p. 138, case 133); and Supplement, p. 16; Webster's Letters Patent, p. 16; Harrison and Wollaston's Reports, vol. 1, p. 585; Carpmael's Reports on Patent Cases, vol. 1, pp. 622, 639, 647, 650; Adolphus and Ellis's Reports, vol. 4, p. 251, and vol. 6, p. 735; Neville and Manning's Reports, vol. 1, p. 1, and vol. 5, p. 647; Crompton, Meeson, and Roscoe's Reports, vol. 1, p. 505; Patentee's Manual, pp. 21, 37-63; Tyrwhitt's Reports, vol. 5, p. 163; Billing on Patents, pp. 46, 63, 141; Law Journal (*Exchequer*), vol. 4 (*new series*), p. 2, vol. 5 (*new series*), p. 60; and (*King's Bench*), vol. 6 (*new series*), p. 183; Willmore, Wollaston, and Davidson's Reports, p. 262.]

A.D. 1831, October 27.—N° 6186.

GUPPY, SARAH.—“A method of applying and arranging certain articles, parts or pieces of cabinet work, upholstery, and other articles commonly or frequently applied to bedsteads and hangings, and also others not hitherto so applied.” The posts are rods of metal, on which are placed “turned and other pieces or parts of pillars, capitals, and pediments.” The rods pass through the side and end frames and through the legs. The bedstead rests on a platform, in one or both sides of which are drawers having sliding tops, and serving when drawn out as bed-steps. There is a “drawing tester vallance at the upper part of the bed for the purposes of ventilation.” A board or rod is placed across the top frame of the bedstead furnished with two pulleys or rollers, over which a cord is passed having a handle at each end; these are “to be used for exercise when in bed.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 13 (*third series*), p. 337; London Journal (*Newton's*), vol. 10 (*conjoined series*), p. 338; Register of Arts and Sciences, vol. 7 (*new series*), p. 1.]

A.D. 1831, November 9.—N° 6188.

MINTER, GEORGE.—“A fastening for dining tables and other purposes.” Two plates having two hooks or eyes formed on each are screwed to one leaf of a table, and two similar plates carrying each only one hook or eye to the leaf which is to be fastened to the other. This hook fits between the two and “thus forms a hole” for a key to be thrust into; the key “being wedged shaped on one side causes the two parts of the table to be drawn tightly together, and retains them in such position.” This fastening is “equally applicable to temporary platforms or floorings where the separate parts are required to be held fast together.” The fastenings for tables are usually made of brass; iron is preferable for platforms.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 14 (*third series*), p. 12; London Journal (*Newton's*), vol. 10 (*conjoined series*), p. 241; Register of Arts and Sciences, vol. 7 (*new series*), p. 11.]

A.D. 1831, December 22.—N° 6206.

WINFIELD, ROBERT WALTER. — “Improvements in the construction of bedsteads, one or more of which said improvements is or are likewise applicable to other articles.” The legs and pillars are made of one entire tube, either of metal only

The cover is "one entire piece of stuff, folded or doubled at each " end " in proportion to " the length of the side rail of the back " and seat of the chair."

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 392.]

A.D. 1833, January 31.—N° 6380.

LUTTON, JAMES. — "Improvements in easy chairs." Each side of the framing of the upper part of the chair consists of back rail, arm, and side rail, the last being in the form of a curve or segment. The back and front are each joined by cross rails. Each side framing of the lower part consists of two legs and a curved piece corresponding to the other curve; these framings are also joined by cross rails. The upper framing slides on the lower; they are retained together by stops screwed on to the lower and entering grooves cut on the inside of the upper. A leg rest, composed of two parts hinged together, is suspended to the two sides of the chair and moves on studs. A bar is hinged to the back cross rail which joins the legs and to the rest; this rail is "cut out in the middle to receive it at the time the " seat is brought to its lowest position;" the same is done to the front rail to permit the bar to rise when the back is reclined. The seat is a quadrangular frame attached to the front rail of the chair frame by pins, "which allow of a slight movement, that " is, permit the back of the seat to be slightly elevated as the " back of the chair is caused to recline." On each under side of the seat frame is an inclined plane, and on each end of the back cross rail a friction roller, causing the back of the seat to rise as the chair back reclines; this movement is effected by pressing against the back; pressure on the foot rest brings the chair back to its original position.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 15 (*third series*), p. 274, also vol. 1 (*new series*), p. 343; London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 161.]

A.D. 1833, October 5.—N° 6478.

LEWTY, JAMES WINDEYER. — "Improvements in castors." A cylinder, brazed or otherwise fastened to the bottom of the castor socket, descends into and turns within a socket formed in the horns; "these parts are accurately fitted to each other," and it is by means of the cylinder "that the weight and strain

"on the castor is more securely supported," the castor being at the same time "capable of turning with facility." A pin or axis passes up through the horns and through the cylinder; at its lower end is a projecting head, as well as an enlargement which fits into an opening formed in the bottom of the horn socket; its top is hammered down or rivetted within the castor socket, and a washer or ring of metal is placed between the rivetted head and socket bottom. By such an arrangement of parts "castors will be greatly improved in strength and durability."

[Printed, 6d. Drawing. See Repertory of Arts, vol. 2 (*new series*), p. 73; London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 52.]

A.D. 1834, November 25.—N^o 6721.

LUTTON, JAMES. — "Improvements on castors for furniture." Round the outside of the castor socket is fixed a flanch, which by preference forms "the moulding which is usually made to strengthen the socket at its mouth." To the bottom of the socket is attached a pin which "is turned at the same time with the said flanch on the outside of the socket in order that these two parts may be accurately concentric." To the horns is fixed a ring or portion of a ring "of dimensions suited to the outside of the socket and the under side of the flanch or bearing, and concentric with the centre hole of the horn which fits and moves round upon the bottom pin." The ring may be connected to the horns "by a plain diagonal brace in the direction of the strain," or in any other direction "more agreeable to the taste of the manufacturer." The patentee constructs castors with round sockets without the flanch; he makes the weight "to rest upon the horn by the bottom of the socket, whilst the said ring or collar, attached as aforesaid to the horn, supports it by pressing laterally against the outside of the said socket which is turned concentrically with the pin." If the castor is to fit a leg of other form than round, it is made of the required form, but the flanch is made "so large in diameter as to include the corners or irregularities of such socket;" or "a part of the socket above the flanch" is made of the required shape. If the castor is to be attached to the furniture by a flanch and screws, the dimensions of the flanch are enlarged, and screw holes are inserted in the enlargement "to suit any particular part that may be required."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 122.]

The cover is "one entire piece of stuff, folded or doubled at each "end" in proportion to "the length of the side rail of the back "and seat of the chair."

[Printed, 8*d*. Drawing. See London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 392.]

A.D. 1833, January 31.—N° 6380.

LUTTON, JAMES.—"Improvements in easy chairs." Each side of the framing of the upper part of the chair consists of back rail, arm, and side rail, the last being in the form of a curve or segment. The back and front are each joined by cross rails. Each side framing of the lower part consists of two legs and a curved piece corresponding to the other curve; these framings are also joined by cross rails. The upper framing slides on the lower; they are retained together by stops screwed on to the lower and entering grooves cut on the inside of the upper. A leg rest, composed of two parts hinged together, is suspended to the two sides of the chair and moves on studs. A bar is hinged to the back cross rail which joins the legs and to the rest; this rail is "cut out in the middle to receive it at the time the "seat is brought to its lowest position;" the same is done to the front rail to permit the bar to rise when the back is reclined. The seat is a quadrangular frame attached to the front rail of the chair frame by pins, "which allow of a slight movement, that "is, permit the back of the seat to be slightly elevated as the "back of the chair is caused to recline." On each under side of the seat frame is an inclined plane, and on each end of the back cross rail a friction roller, causing the back of the seat to rise as the chair back reclines; this movement is effected by pressing against the back; pressure on the foot rest brings the chair back to its original position.

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 15 (*third series*), p. 274, also vol. 1 (*new series*), p. 343; London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 161.]

A.D. 1833, October 5.—N° 6478.

LEWTY, JAMES WINDEYER.—"Improvements in castors." A cylinder, brazed or otherwise fastened to the bottom of the castor socket, descends into and turns within a socket formed in the horns; "these parts are accurately fitted to each other," and it is by means of the cylinder "that the weight and strain

"on the castor is more securely supported," the castor being at the same time "capable of turning with facility." A pin or axis passes up through the horns and through the cylinder; at its lower end is a projecting head, as well as an enlargement which fits into an opening formed in the bottom of the horn socket; its top is hammered down or rivetted within the castor socket, and a washer or ring of metal is placed between the rivetted head and socket bottom. By such an arrangement of parts "castors will be greatly improved in strength and durability."

[Printed, 8d. Drawing. See Repertory of Arts, vol. 2 (*new series*), p. 73; London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 52.]

A.D. 1834, November 25.—No 6721.

LUTTON, JAMES. — "Improvements on castors for furniture." Round the outside of the castor socket is fixed a flanch, which by preference forms "the moulding which is usually made to strengthen the socket at its mouth." To the bottom of the socket is attached a pin which "is turned at the same time with the said flanch on the outside of the socket in order that these two parts may be accurately concentric." To the horns is fixed a ring or portion of a ring "of dimensions suited to the outside of the socket and the under side of the flanch or bearing, and concentric with the centre hole of the horn which fits and moves round upon the bottom pin." The ring may be connected to the horns "by a plain diagonal brace in the direction of the strain," or in any other direction "more agreeable to the taste of the manufacturer." The patentee constructs castors with round sockets without the flanch; he makes the weight "to rest upon the horn by the bottom of the socket, whilst the said ring or collar, attached as aforesaid to the horn, supports it by pressing laterally against the outside of the said socket which is turned concentrically with the pin." If the castor is to fit a leg of other form than round, it is made of the required form, but the flanch is made "so large in diameter as to include the corners or irregularities of such socket;" or "a part of the socket above the flanch" is made of the required shape. If the castor is to be attached to the furniture by a flanch and screws, the dimensions of the flanch are enlarged, and screw holes are inserted in the enlargement "to suit any particular part that may be required."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 122.]

FUR.

Y.

A.D. 1835, January 15.—N° 6746.

CHERRY, JAMES.—“Improvements on bedsteads or apparatus applicable for the ease and comfort of invalids and others.” The bed frame is hinged to the bottom of a standard frame; it contains two frames, the one a leg rest, the other a body rest, the former being “raised in the centre or knee point (which is “rule jointed).” The mechanism for raising each rest consists of a roller with ratchet and catch, a quadrant, and a strap (round the roller) fastened to the bottom of the quadrant. To raise the bed frame there are employed two quadrants, one on each side, with straps (fastened to them as before) round drums on the roller, each drum being “three times the diameter of the roller.” This roller is connected by other straps on the drums to another roller (with ratchet) which “is the moving power.” The sacking is rendered moveable to the change of position of the body by the following arrangement:—Two cylinders running lengthwise, one on each side the bed frame, revolve on axes in the head and foot boards. Inside each cylinder “are two springs upon the chronometer principle, but proportionally stronger, one near each end;” the springs are attached to the axis and to the cylinder. “The bed sacking is attached to the cylinders, being three times the width of the bed frame. One third of the sacking is wound round each cylinder, the other occupies the space between.” When the springs “are set up,” the sacking is drawn tight; the weight of the body “causes each cylinder to revolve inwardly,” and “the sacking with the bedding is compressed to a concave of any depth from three to twelve inches.” Beneath the sacking is “a concave platform” with an aperture in it, and under the platform is a “bed pan and groove frame in which it slides.” In the sacking are “two apertures, each corresponding with that in the platform;” they are “four feet distant from each other,” so that “when the sacking is stretched across one aperture appears on each cylinder.” The mattress has a corresponding aperture which is closed by a cushion. The head and foot rests may be removeable, and when “affixed in the bedstead” raised by mechanism similar to that before described. The Specification contains a description of a mode of changing “the bed and bedding.”

[Printed, 8d. Drawing. See Repertory of Arts, vol. 5 (*new series*), p. 140; London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 361; *Mechanics Magazine*, vol. 25, p. 385; Exchequer Reports, vol. 2, p. 557.]

A.D. 1835, January 31.—N° 6756.

COOK, BENJAMIN, and COOK, JOSEPH. — “Improvements in beds and mattresses.” This invention “consists in so constructing or combining beds and mattresses with metallic framings, that such metallic framings shall form the main part of the framing of the bedstead, and fold together therewith, and in constructing certain pockets or recesses under such beds and mattresses.” The bed frame is composed of head, foot, side, and middle rails, the latter dividing it into two quadrangular frames capable of folding by the aid of hinge or rule joints. Stumps, wherein legs are screwed, are rivetted or otherwise fixed at the corners, and two legs are added to support the middle. Webbing is sewed to the sides of the frame, and over it is secured a cover of canvas or tick. The stuffing is then put on, and another cover, and the whole is “tied down at intervals” in the customary manner. The mattress is, however, to be made into two parts, one covering each quadrangle. On the under side are constructed pockets closed by straps and buckles, or drawers with a framing of metal or wood.

[Printed, 18d. Drawings. See Repertory of Arts, vol. 5 (*new series*), p. 205; London Journal (*Newton's*), vol. 11 (*conjoined series*), p. 87.]

A.D. 1835, March 11.—N° 6788.

JUPE, ROBERT. — “An improved expanding table,” so constructed that the sections composing its surface may be caused to diverge from a common centre, and that the spaces caused thereby may be filled up by inserting leaves or “filling pieces.” The table when expanded forms usually a round; but it may be arranged to form an oval or oblong. The expansion may be by hand, or “by turning the surface and bed of the table round the pillar.” In the former case the bed is composed of a hoop or ring, guide pieces connected to the hoop, and main supporting arms which project from the pillar. The sections are secured to slides; these and the guides are fitted to each other by tongues and grooves. The sections are drawn out and the leaves are placed between them on the bed; on each pointed end of the leaves is a piece of metal which takes into a groove or notch “formed round the metal centre pin or button;” the edges of the sections and leaves have projecting ribs and grooves so as to make the joints complete. For an oval or oblong table the

sections, leaves, &c. must be cut accordingly, and in the latter case, the bed turns on a pin fixed on the top of the pillar. The expansion is obtained by the aid of curved bars pinned at the inner ends to the arms and at their outer ends to the under side of the slides. The top being turned partly round, the bars, slides, and guides, cause the sections to move outwards in radial directions; "the bed of the table in this instance rests upon the outer ends of the arms," "by a projecting rib or fillet placed on the inside of the outer ring or hoop," and there are clamps screwed on the top of the arms, which "project over the fillet and prevent any strain upon the table on its being moved about." The expansion may be obtained by curved bars attached to the arms, and saddle pieces connected to the slides and turning on centre pins; the saddle pieces "embrace the curved bars" and slide upon them when the bed is turned round; in this instance the bed rests upon the top of the pillar and on a circular bar supported by the arms to which it is attached. Again, curved grooves may be employed "formed in a bottom board fixed on to the frame," but the patentee prefers the former methods.

[Printed, 1s. 6d. Drawings. See Repertory of Arts, vol. 7 (*new series*), p. 88, and vol. 8, pp. 112, 155, 246, 295, 363; London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 73, and vol. 9, p. 235; and Supplement, p. 17; Webster's Letters Patent, p. 17; Webster's Reports, vol. 1, pp. 143, 144, 145; Webster's Patent Law, pp. 114, 116, 118, also p. 136 (case 119); and Supplement, p. 17; Carpmal's Reports on Patent Cases, vol. 2, pp. 242, 289; Billing on Patents, p. 170.]

A.D. 1835, June 4.—N^o 6849.

HANCOCK, THOMAS. — "An improvement or improvements
" in air beds, cushions, and other articles manufactured from
" caoutchouc or indian-rubber, or of cloth or other flexible
" material coated or lined with caoutchouc or indian-rubber."
This invention consists in the application of strips of india-rubber to caoutchouc or cloth, so as to contract or gather it up
" in order to cause or increase elasticity therein." A sheet of caoutchouc sufficient to form one side of the article is laid upon a flat surface of somewhat larger dimensions. Some india-rubber is cut into thin or "contractile slips," which are heated to a temperature of from 150 to 200 degrees stretched almost as much as they can bear without breaking, laid across, and fastened "in their state of extension" to the sheet. For cushions and like articles the slips should be placed from three to four inches apart, for beds from six to eight. The strips are now to be pressed

down on the sheet until they become united to it. The sheet is then "coated with thin glue size and whiting," leaving uncoated for cushions about half an inch (for beds an inch) round the edges, and the same across where each strip is placed, "except that across or over each strip one or more spaces or lines of about an inch broad must be coated with the whiting, so as to form a coated or protected communication from space to space between each strip." Another sheet similar in size and treatment is placed on the other, "accurately bringing into contact the coated and uncoated parts," and the whole is submitted to moderate pressure. In about an hour the uncoated parts will be united, while the coated parts will remain separate and form receptacles for air. Other preparations may be used, or the spaces intended to remain disunited may be lined with cloth, kid, &c., fixed thereto by a solution of rubber. For pillows the whole of the sheets except the edges should be coated. If the article is to remain permanently inflated, air must be forced in through a small opening which must afterwards be closed up; if only occasional inflation be required, a cock can be fastened in. The article must be exposed for some time to a moderate heat, when the strips of rubber "will exert their contractile force, and gradually contract or gather up" the sheets and give the intended elasticity. If cloth be used instead of caoutchouc, the union of the parts to be united is made with a solution of rubber. Contractile strips may be applied to articles already made by coating them with solution of rubber on the parts where the strips (with a tape or ribbon covering) are to be fastened on.

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 365; *Engineers' and Mechanics' Encyclopædia*, vol. 1, p. 815.]

A.D. 1836, February 26.—N^o 7014.

BARRON, JAMES, and THOMAS, EDWARD.—"Improvements on bedsteads and apparatus to be used with or for bedsteads." The patentees claim seven inventions. The first is affixing projecting plates on bedposts, and forming other projecting plates as part of the folding joints, to support the inner frame which carries the mattress; holes are drilled through the plates, through which pins are passed to unite the inner to the outer frame. The second is a mode of connecting the cross rails of the inner frame, namely, by means of studs on the frame

and slots in the rails. The third consists in the method of applying the side rails to the stretcher bars; in the latter are formed recesses wherein the former are held by the screws by which the posts are fastened on. The fourth and sixth consist in constructing of malleable instead of wrought iron, the folding joints and the projecting bedpost plates; these plates have "a dovetail slot or opening to receive the dovetail tenon affixed to the side and end rails." The fifth is a new construction of the posts of wooden bedsteads by combining a number of parts "together." The parts are a plinth, having a block fixed in it, whereto the castor is screwed; a hollow portion of the post secured on the plinth by metal side pins, a wooden middle pin (having its top and bottom expanded by wedges, when the post and plinth are put together) and glue; an upper part bored to receive rods and screw nuts, and a wooden pin "expanded by wedges at one end," for uniting it to the hollow portion. The seventh is "an apparatus for the use of persons lying in bed, and particularly in berths;" it is in the form of a table or tray or a frame to contain a basin. "A curved plate forming a screw" is fixed to the foot or other convenient part near the bed or berth. A frame carrying the table, &c. "has an opening with friction rollers," which working against the curved plate guide the frame up and down. A cord is fastened to the frame, and passing over pulleys is secured to a spring catch placed within reach of the person lying down.

[Printed, 1s. 8d. Drawings.]

A.D. 1836, September 22.—No 7189.

JUPE, ROBERT.—"Improvements in apparatus applicable to book and other shelves." The apparatus consists of "folding stops or supports;" they give the required support to shelves, offer great facility for moving shelves, "will not be in the way of books being slid between two shelves," and obviate the necessity "of cutting grooves at the sides or ends of book cases or other surfaces to which shelves are applied." The construction is as follows:—Two plates of brass or other suitable material are screwed to the under surface of a shelf; they are hinged or connected by pins to a piece formed with projecting studs or stops, "which when placed in suitable holes in the upright ends or divisions of book cases, or other places, become the supports of the shelf." The folding stops may be

applied to both ends of a shelf, or to one end only, the other being furnished with fixed stops. The patentee does not confine himself "to the precise shape or form of the parts constituting the folding stops or supports."

[Printed, 8d. Drawing. See *Repertory of Arts*, vol. 8 (*new series*), p. 220.]

A.D. 1836, October 13.—N^o 7206.

GEITHNER, FREDERICK BENJAMIN.—"Improvements applicable to the drawing or winding up of window and other roller blinds or maps, which improvements are also applicable to other useful purposes." On the collar of the socket which contains the left end of the roller a "perfectly smooth globular ball" is rivetted or otherwise fastened. This ball rotates on a clip having concave beds which may be lined with leather; the tension of the clip on the ball is regulated by a thumbscrew. The clip may be fixed on the collar, and the ball on the bearer, and other methods may be employed for regulating the power of the clip. The cord winds on an ordinary roller; but underneath the roller is a clip guide, slightly compressed by means of a small spring, causing the cord to wind tightly round the roller, and preventing it from getting entangled. The ball movement is applicable to looking glasses; a ball fixed to a small plate is secured on each standard, and a metal box with a moveable bed or clip and a thumbscrew on each frame.

[Printed, 8d. Drawing. See *Repertory of Arts*, vol. 12 (*new series*), p. 281.]

A.D. 1836, December 15.—N^o 7258.

HESTER, JAMES TORRY.—"An improvement in the constructing, making, or manufacturing of chairs." By the aid of this invention "the seat and back may be brought to one uniform horizontal plane" and form a couch. The back and seat are stuffed. The frame of the back is hinged at its lower end to the chair frame, and supports the back part of the seat, which is "allowed to advance its front edge as the back is made to incline." Two "couch legs" are framed into a cross bar which is hinged to the upper part of the chair back, and two sides of a couch frame are hinged to the lower part of the back rail and pinned or pivot-jointed at their upper ends to the couch legs. The arms are different in construction, but hinged to the chair

back; one is made in such a manner that, when the chair back is depressed, it "lies flat along the side of the cushion." The other has "a false top piece" hinged on the hind end of the under arm. The false top is provided in front with a stop pin and nut to prevent its rising higher than is necessary. Near its middle is another pin which, as the false top is raised or lowered, rises out of, or takes into, a rack or block pierced with holes to receive it and sliding in a hollow space cut in the under part of the arm. A hinge at the back upper edge of the stump or upright "allows the arm to take the necessary inclination at each point of stoppage." A leg rest may be added and acted on in the following manner:—A compound lever is secured at one end by butt hinges to a cross spar attached to the side rails, and at the other end by "a peculiar kind of hinge" to the rest. A compound pulley worked by a winch acts on the lever and causes it to raise or lower the rest. The winch handle "is fitted with a joint which enables it to be turned down and brought to act" against one of two stops, whereby the rest remains "stationary" at any required point of its elevation or depression."

[Printed, 10*d.* Drawing.]

A.D. 1837, October 5.—N^o 7443.

LOACH, JOHN.—"Improvements in roller blind furniture and in the mode of manufacturing the same, part of which improvements are applicable to other purposes." The first part of this invention consists in the application of a self-acting wedge in lieu of a rack, spring, or other means of confining the lower pulley in the required position in the frame or sheath. The wedge is made with a projection at each end. The pulley carriage, having a channel cut on each side of the base for the front edges of the sheath to slide in, is placed between the projections, and the whole is introduced into the sheath "with the thicker end of the wedge uppermost." The second part relates to the manufacture of pulleys for fixing on the ends of rollers. Two pieces of rolled metal are stamped or raised in dies or moulds of the requisite forms. These pieces are forced together, so that the middle parts form a cylinder or socket, and the ends a pulley. A pivot can be rivetted on to the socket.

[Printed, 6*d.* Drawing. See Repertory of Arts, vol. 9 (*new series*), p. 266; Mechanics' Magazine, vol. 32, p. 700; London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 269.]

A.D. 1838, March 14.—N^o 7592.

DALE, WILLIAM.—“Improvements in constructing columns, “pillars, bed posts, and other such like articles.” The articles are made of several tubular pieces of china or earthenware which are joined together by a shaft or rod. The pieces are manufactured and ornamented by any of the ordinary processes; they may be of any shape externally, “provided that their ends fit “accurately one to the other at their junctions;” the ends may either “socket into each other” or be made flat; in the latter case “the joint should be covered by an ornamental hoop.” The shaft is passed through all the pieces, and nuts or other fastenings hold them securely together. A collar or packing of wash leather or some soft material between the ends of the pieces will enable the nuts to be tightened up without danger. The lower end of the shaft may be formed to receive a castor, and the upper end “to receive the bed cornice and a cap piece or other ornamental “appendage.” In cornice poles the end pieces and the fastening nuts are covered by caps, “which hide the ends of the shaft and “form ornamental bosses.”

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 277.]

A.D. 1838, June 30.—N^o 7716.

DOBBS, WILLIAM. — “Improvements in the construction of “racks and pulleys for window blinds and other useful purposes.” The case or frame in or upon which the tension pulley slides is made as follows:—Strips of flat metal are cut from a thin sheet; the end of each strip is slightly bent up, and the strip is passed through the “hollow frustrum of a cone;” its edges are gradually bent inwards, and, after passing the smaller end of the cone and through a suitable hole in a steel plate, it “comes out in a partial tubular shape.” It is then annealed and scoured and slipped on to a mandril, and both are passed into a properly shaped hole in another steel plate; the plate is placed on a draw bench, and the ends of mandril and tube are taken hold of by a pair of pliers. “On a sufficient “force being applied by a draw chain to the handles of the “pliers,” mandril and tube are drawn together through the plate and delivered on the opposite side in the finished shape required. The tube is slipped off the mandril and cut up into

lengths for several frames; the ends are trimmed, &c. as usual. If spring pulleys are to act in the frames, ratchet teeth are formed up the middle of the back by "a rolling indented die," or by other means. Instead of a spring and rack the patentee prefers to fit the pulley loosely upon a stud which screws into a sliding plate or block behind the flanges. When the pulley has been drawn down sufficiently low to tighten the cord, the rosehead of the stud is turned so as to draw up the block tight against the back of the flanges.

[Printed, &c. Drawing. See London Journal (*Newton's*), vol. 14 (*continued series*), p. 304; Patent Journal, vol. 3, p. 251, vol. 4, p. 36, vol. 6, p. 210; Exchequer Reports, vol. 3, p. 427.]

A.D. 1838, September 8.—N^o 7799.

BROWN, JOSEPH.—"Improvements in beds, sofas, chairs, and "other articles of furniture, to render them more suitable for "travelling and other purposes," particularly for use on ship-board. The mode of suspension is described in that of a sofa. A standard framing, resting on the floor, has at the back of the sofa an upright, which receives the axis of the sofa frame; this frame carries the seat and moves on a curved surface below, there being a corresponding curved surface affixed to the standard or to the floor; between the two surfaces are rollers. The seat part is suspended in the frame on axes, one at each end. There are weights which may be removed to either end of the frame, "in "order to preserve the equilibrium when but one person is sitting "on the sofa." If the sofa be required to swing in only one direction, the seat part only is suspended on axes in its frame. Chairs and berths, placed one above the other, are similarly arranged to swing on axes working in a standard frame. A child's cot, the bed of which is circular on the under side, swings on the circular part of the standard; flaps are hinged to the ends and kept upright by thumbscrews; in one flap pins are screwed to support head curtains. When the bed is not in use, the pins are removed, the flaps are let down and form a table-top. A cot, suspended similarly to the sofa, may serve as a seat; it can be raised off the curved part of the standard by a cord fastened to the cot on one side, passing over pulleys and attached to a spindle on the other side; the spindle has a handle, by turning which the cord may be tightened; and a pin, passing through the spindle, keeps it in

position. A table or basin may be suspended in a frame on four axes, which allow it to swing in different directions.

[Printed, 10d. Drawing. See London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 163.]

A.D. 1838, October 17.—N° 7835.

HANDCOCK, ELIAS ROBISON.—"Improvements in castors "for furniture and other purposes," having for object "first, to "reduce the amount of friction in castors; and, secondly, to "obtain a perpendicular bearing upon the roller immediately "over the centre of the socket." The castor is formed "on the "principle of a ball and socket, by placing a spherical roller "within a box frame socket or recess, in which it is enabled to "turn in any direction and become a universal roller, having "its bearings above against the peripheries of several antifriction "rollers mounted on axles within the box;" the ball is prevented from falling out by a collar screwed into the socket below. The rollers may be four, five, or six in number, but the patentee does not confine himself to any precise number or to any form, as they may be cylindrical or bowl shaped. The axles of the rollers are carried by brackets which are fixed to a plate extending across the bottom of the castor socket, or the rollers may all be mounted on a circular wire "which is confined in its place by a "circular groove in a bead or circular rib." The upper portion of the castor may be either a socket or a vertical screw pin. The patentee makes another shaped castor "particularly applicable "for trucks and gun carriages on shipboard," the socket of which "is intended to be inserted into the under part of the piece of "furniture;" a flanged plate by means of which the castor is screwed on "forms the collar that confines the spherical roller in "the socket."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 367.]

A.D. 1839, January 29.—N° 7955.

COLLETT, THOMAS.—"Improvements in children's cots," in order to give "a swinging motion thereto, without depending on "the attention of the nurse." The cot is suspended by two springs to two posts, and to the end framing are attached a "train "of wheels and other works." The works are "in many respects "like the spring and train of wheels of a clock;" they consist

of a barrel containing a steel spring, a conical barrel, on to which a cord is wound, and from which it is drawn by the spring barrel, and three pinions and wheels, the uppermost of which takes into and drives a pinion to whose axis a crank is applied. The crank pin carries a friction roller, "and is so arranged as to slide along the crank, there being a spring, however, to control and resist the movement, by which means the crank in its revolution will offer an elastic pressure to the sides of a groove, against which the friction roller on the crank pin moves." A pin, fixed in one of the posts, passes through a lever whose fulcrum is carried by one of the springs, and two projecting plates in which the roller works form the groove at the lower end of the lever. The axis of the conical barrel is formed at its end to receive a key for winding up the cord. "When motion is taking place in the train of wheels caused by the spring, there will be a swinging motion communicated to the cot."

[Printed, &c. Drawing.]

A.D. 1839, August 13.—N^o 8193.

BROWN, HENRY.—"A new covering or plating for household furniture, picture frames, cabinet and fancy work, and other articles of domestic and personal use, and the mode of making such covering or plating." This covering, which the patentee calls pelletine, is manufactured from animal skins, and may be stained of any colour. He proposes to use it "after the manner of veneers." Sheets of parchment, vellum, or skins of any kind similarly dressed, are immersed in a caldron of boiling water for about five minutes; they are then taken out and stretched evenly on frames and left to dry thereon; or they may be removed from the frames and laid aside to dry. They are stained of any colour "by means of the common dyeing stuffs," while they are in a soft and porous state, or when dry and solid. They may be rendered soft and porous "by the pressure of rollers and plates, heated by steam or otherwise," but the patentee prefers the former mode.

[Printed, &c. No Drawings. See *Inventors' Advocate*, vol. 2, p. 165.]

A.D. 1839, October 10.—N^o 8240.

HARCOURT, DAVID. — "Improvements in castors for furniture and other purposes." The first part of this invention relates to a method of constructing castors which have either

a socket or a plate. The wheel is mounted on the horns as usual, and the horns move on an axis which passes through the main pin; this is carried by the socket or plate, but is capable of turning freely. "An external ornamental covering and support of the "lower part of the pin" constitutes the standard between the horns and the socket or plate. The horns carry a friction wheel which moves against a "circular inclined track" placed between the socket or plate and the standard, consequently pressure on the pin will force the horns downwards towards the ground at the point where the horns are connected to the pin, but such pressure will keep the wheel in contact with the track and so relieve the pressure on the pin. The second part refers to a mode "of constructing castors with elongated pins "or axes" so that "the weights carried by such castors are "more advantageously borne," and the castors are rendered less liable "to the prejudicial action of strains." This elongated pin is enclosed in a metal tube; it moves freely therein "being "so made as only to touch at the lower part of the tube;" its point is conical and enters a conical hole in a piece of metal introduced into the top of the tube; "or the end of the tube "may be welded together to form the end bearing." In the pin is a groove "which receives a hoop ring;" this serves to retain the pin in its place and at the same time allows of its easy turning in the tube. "The tube according to one mode of "construction is made of plate metal having a flange or circular "plate affixed by brazing or otherwise to the lower end, and "this plate may be used in like manner to plate castors, or "in place thereof a socket may be applied," but "the simple "act of making the holes in the furniture of such a size as "to require the tubes to be slightly driven will be holding "enough without screws." The tube may be of cast-iron or malleable cast-iron or cast brass, and the piece of metal may be fixed in the top by brazing or priming. In the third part the patentee describes his methods of casting tubes or frames for "carrying a suitable bearing."

[Printed, 8d. Drawing. See Repertory of Arts, vol. 14 (*new series*), p. 10; London Journal (*Newton's*), vol. 18 (*conjoined series*), p. 296; Inventors' Advocate, vol. 2, p. 243.]

A.D. 1839, December 16.—N^o 8320.

THOMPSON, JAMES WILLIAM.—"Improvements in the construction of bedsteads, which improvements are particularly

"applicable to the use of invalids." By aid of this invention the body of the patient may be "brought into any position that may be required in an easy and convenient manner, and without any exertion or perceptible motion to the patient." At each corner of the framework of the bedstead is an upright rack, and to the tops of the racks jointed rods are attached by universal joints. To these rods are connected by metal blocks correspondingly jointed rods to which a supporting sheet or thin mattress is secured either by cords (like sacking) or by straps attached to the under side of the sheet. The rods are held rigid when required to be so by sliding tubes. The racks are worked by pinions which are loosely mounted on shafts, so that they can be readily thrown out of gear; and on the middle of the shafts are fixed worm wheels; these are caused to revolve by right and left handed screws mounted on a shaft which extends from the head to the foot of the bedstead and rotates by turning a winch handle. The pinions are thrown into or out of gear by pulling out or pushing in handles connected to them by short arms, and on each end of the cross shafts is a feather which "takes into a corresponding groove formed in the pinion" and causes the pinion to revolve with the shaft. To raise the whole bed all the joints must be rigid and all the racks and pinions in gear, and "it will be evident that any one part of the jointed framing may be raised, while the other parts remain stationary, by putting in or out of gear, as may be required, the pinions which correspond to such parts." Hooks or catches prevent the pinions "from being thrown out of gear by the handles being accidentally pushed in." The invention may be adapted to any description of bedstead, and in such a manner that no part of the mechanism is apparent."

[Printed, 1s. Drawings. See London Journal (*Newton's*), vol. 18 (*conjoined series*), p. 1; *Inventors' Advocate*, vol. 2, p. 419.]

A.D. 1839, December 16.—N^o 8321.

NEWMAN, WILLIAM. — "Improved mechanism for roller blinds," to be called "Simcox and Company's patent blind furniture." On the left end of the roller is a socket connected to a hollow chamber, on the outer end of which a flange is screwed. In the middle of the chamber is rivetted a steel pin which revolves in the bracket; projecting from the chamber is a moveable friction collar, "constantly pressed outwards by the reaction of a compressed helical or worm spring" against a

turned bearing on the bracket. On the right end of the roller is a socket carrying the pulley on which the cord is wound. A cap covers the upper half of the pulley, the underneath being cut away for the passage of the cord. To the cap is rivetted a pin on which the pulley revolves, and at the back of the cap is a wedge-shaped piece, against the side of which the feather spring of a latch abuts; in the latch is a notch, into which the upper edge of the rim of a cavity "made in the side of the bracket enters and holds it fast." To insure steadiness of action there is in the interior of the bracket an inclined plane which comes into contact with the wedge. "The solid bearing of surfaces thus obtained, together with the elastic pressure of the helical spring at the other end of the roller, keeps the whole firmly together without shaking."

[Printed, 6d. Drawing. See *Inventors' Advocate*, vol. 2, p. 406.]

A.D. 1839, December 24.—N^o 8330.

CLARKE, THOMAS HARDEMAN. — "Improved fastenings for window sashes, tables, and such like purposes." "My improved fastenings," says the patentee, "consist of wedge-formed bolts adapted to suitable frames or guides, according to the circumstance for which they are required." On one sash or one leaf is screwed or otherwise fastened a frame or guide carrying a wedge-formed bolt, which "is urged backwards or forwards" by aid of a knob or handle; on the other sash or leaf is fastened a frame, "to which is attached the hasp or catch-piece." Respecting the sash fastening he adds that, "when the bolt is withdrawn, the hasp or catch-piece may be moved in its frame so as to release the sashes and allow them to pass each other;" and that the bolt "by its peculiar property" draws the sashes close together; and respecting the table fastening that "the peculiar shape and property of the wedge-formed bolt will cause the table to be drawn and firmly held together when so required." He concludes by saying that "the same advantages will attend the application of these bolts to other like purposes."

[Printed, 6d. Drawing. See *Inventors' Advocate*, vol. 3, p. 3.]

A.D. 1840, January 21.—N^o 8349.

HALL, JAMES. — "Improvements in beds, mattresses, and apparatus applicable to bedsteads, couches, and chairs."

This invention consists "in certain arrangements of appendages attached to feather beds, mattresses, &c.," and is especially intended for invalids. The bedding is composed of a straw mattress, a hair mattress, and a feather bed; in each is an aperture through which descends a conducting pan; a stuffed cushion is fixed on the top of the pan with sliders. Underneath the pan is a case which turns on castors and contains the receivers; by moving a handle to the right one receiver is placed directly below the pan, and by moving it again to the left the other is similarly placed "to receive the water which washes the pan and prevents any smell." At the head of the bed is a chair "so formed in shape that the whole of the person's back will rest on it." The support of the chair back "is placed into a socket fixed on the head board, and turns on two hinged pivots fixed to the back of the chair, which moves easily on the conductor nearer the head board or farther from it at pleasure, as may be required by the patient, and is so fixed by a screw pin on the support that it will prevent any risk of the chair falling to either side." There is a cushion for the breast to rest upon with straps attached to each side of the chair, and a spring seat "which the person may sit upon in bed." Another appendage is a bed table, the pillar of which may be raised or lowered; "the pillar is put down by the side of the apertures and is fixed firm in a few moments with the screw at the end of the pillar into a support on the bed bottom." Two soft ropes are attached to the head and foot of the bed roof to assist the patient in rising up. The pan will answer all the purposes of a bidet, as it has a stopper (with a chain attached) which fits into it. The patentee makes less expensive mattresses and beds, "any one of which may be used by itself for a bed, with an aperture for a pan with a bottom;" the pan is placed in a pocket attached to the lower side of the mattress, and when not in use is closed up with a cushion. He makes also invalid chairs with a stuffed cushion or spring bottom; in these is an aperture for a pan "which is closed up nearly with a corresponding soft cushion."

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 33, p. 205; *Inventors' Advocate*, vol. 3, p. 67.]

A.D. 1840, April 15.—N° 8471.

POTTS, WILLIAM. — "Apparatus for suspending pictures and curtains." For suspending pictures two rods or chains are

hung from hooks in the cornice or on or in a rail therein. The rods are hollow and have in them a series of equidistant openings larger at top than at bottom. Across the picture frame near the top is a hollow bar having holes therein and a pulley at each end. The picture is suspended at top by placing the stud (with an enlarged head) of a pulley frame in an opening in each rod, and introducing into holes in the hollow bar hooks at the ends of a cord that passes round the four pulleys; below it is secured on each side by a short stem having at one extremity a stud which enters a hole in the rod, at the other an enlarged head which receives a ring on the frame. "This apparatus is more "suitable for pictures not often requiring change of position:" to allow the inclination of a picture frame being varied from time to time more readily, the bar is dispensed with, and the cord is fastened to one end of the frame, passes round the pulleys on the rod, round a guide pulley on the opposite side of the frame, and descends to a small windlass at the back; the windlass is provided with a ratchet and catch, and the axis of the barrel is squared for a key. The attachment of the hooks to the cornice may be varied, and illustrations are given in the drawings. Curtains for windows or beds are hung from hooks attached to runners (furnished with rollers or wheels) in the cornices.

[Printed, 1s. 4d. Drawings. See *Mechanics' Magazine*, vol. 3, p. 445; *Inventors' Advocate*, vol. 3, pp. 154, 260; *Engineers' and Architects' Journal*, vol. 3, p. 400.]

A.D. 1840, April 23.—N^o 8485.

RYMER, JAMES MALCOLM. — "Improvements in castors for "furniture, such improved castors being applicable to other "purposes." This invention consists in the means employed "for inducing the continued revolution or rotation of a sphere "upon its axis under pressure." On the surface of the sphere are cuttings or indentations produced in any manner most convenient and assuming any form or design. The sphere is held in a cup, within which is "a piece of metal which fits into the cup" and is "in continual contact with the sphere" when the parts are put together; or the sphere "may rest or rub against a ring "placed within the cup to receive it." Upon a lateral force being applied to the castor so constructed the sphere will revolve on its axis; by the cuttings or indentations on the surface the friction of the sphere against the piece of metal is reduced "in "consequence of the reduction of the area of the rubbing surface

"by part of it being removed in order to produce the indentations, while at the same time the friction of the sphere against the surface over which it is required to roll is increased by means of little particles of matter and asperities or projections which exist to a greater or less degree upon all surfaces, insinuating themselves into the cuttings or indentations in the sphere." The piece of metal or the side of the cup and the sphere should be of different material.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 27; Inventor's Advocate, vol 3, p. 276.]

A.D. 1840, May 12.—No 8507.

WALTON, JAMES.—"Improvements in the manufacture of beds, mattresses, pillars, cushions, pads, and other articles of a similar nature, and in materials for packing." The patentee first describes a method of blowing balls of india-rubber, adding that he makes no claim to the invention. He next details the following process, for which he uses an air vessel (from which the air is to be exhausted) provided at bottom with a pipe connected to an air pump, and with a cock in its neck. On the top of the neck are two hemispherical cups joined by a hinge; one cup "is fixed on the top and communicates with the cavity of the cock;" the other communicates with it by a flexible tube. When a sheet of rubber has been tightly stretched over both cups, and when the air has been exhausted, the cock is turned, and the rubber is forced down into the cups; they are then closed and the edges of the rubber adhere and form a ball. An apparatus on the same principle is described, by which a number of balls can be made at the same time. Hinged to this apparatus, or detached from it, is a plate sufficiently large to cover all the cups and perforated with holes corresponding to them. When the rubber is forced down, the plate is placed on top of the cups, and cotton flock or similar matter is strewed over with a sieve, thus coating the inside of the balls. To form a bed or cushion a thin sheet of rubber or other air-tight material is laid between each layer of balls, and stronger sheets enclose the whole, the edges being cemented with solution of rubber. The balls either single or in sheets are applicable to packing plate glass, instruments, machines, or articles "of nice construction or easily liable to injury."

[Printed, 1s. 10d. Drawings. See Repertory of Arts, vol. 16 (*new series*), p. 65; London Journal (*Newton's*), vol. 18 (*conjoined series*), p. 187; Mechanics' Magazine, vol. 83, p. 502; Inventors' Advocate, vol. 3, p. 322.]

A.D. 1840, July 30.—N° 8581.

BACHELARD, JOHN LOUIS.—(*A communication.*)—"Improvements in the manufacture of beds, mattresses, chairs, sofas, cushions, pads, and other articles of a similar nature." This invention relates to stuffing beds, &c. with cork "cut into fine" or a coarse sawdust fibre, and in lengths of half an inch to two or more inches long." The patentee does not wholly discard the use of horsehair and wool; he uses "the fine cut fibres of cork as a substratum," and places a thin covering of horsehair or wool thereon.

[Printed, *4d.* No Drawings. See Repertory of Arts, vol. 15 (*new series*), p. 310; London Journal (*Newton's*), vol. 18 (*conjoined series*), p. 186; Mechanics' Magazine, vol. 34, p. 140; Inventors' Advocate, vol. 4, p. 84.]

A.D. 1840, August 17.—N° 8605.

YOUNG, JOHN.—"Improvements in the manufacture or construction of knobs, handles, frames, tablets, boxes, and other ornamental articles, applicable to the decoration of houses and domestic furniture."

[No Specification enrolled.]

A.D. 1840, October 1.—N° 8649.

JOYCE, THOMAS.—"A certain article which forms or may be used as a handsome knob for parlour and other doors, bell pulls, and curtain pins, and is also capable of being used for a variety of useful and ornamental purposes in the interior of dwelling houses, and other places." This invention consists in the application of a mirror, either of glass silvered at the back, or of polished steel, or other metal capable of being so polished "as to reflect light," and of suitable shape, to the articles mentioned in the title. The mirror is lodged in a recess hollowed out in the front of knobs and in the most conspicuous part of the other articles, and more than one may be employed if deemed conducive to the ornamental appearance thereof. The mirror is held in its place by a ring or border rim of ivory, mother-of-pearl, metal, or other material. In constructing knobs for doors the rose has a cavity sunk into it for the small part of the knob to enter; this small part is "a piece of metal covering the small end of the wood and going up into the centre thereof, and having a square hole up through the centre of the metal, in order to

"fit on the square spindle or axis of the lock." A circular plate of thin metal, inlaid into the bottom of the cavity and having a small hollow neck projecting from the centre, enters the central hole through the rose and forms a lining to it; the round part of the spindle fits into the lining, whilst the metal at the end of this small part fits to the flat surface of the plate. The other articles are made in the ordinary manner.

[Printed, *sd.* Drawing. See *Mechanics' Magazine*, vol. 34, p. 301; *Inventors' Advocate*, vol. 4, p. 230.]

A.D. 1840, December 18.—N^o 8745.

HANDCOCK, ELIAS ROBISON.—"Improvements in mechanism applicable to turn-tables for changing the position of carriages upon railroads, which improvements are also applicable to castors for furniture and other purposes." The improvements common to turn-tables and castors are, "the application of antifriction collars to axles," and "arranging and supporting vertical axles or pivots so as to sustain heavy weights thereon." The castor is composed of, 1, a socket, horns, and wheel; 2, "a hollow cylinder of cast iron, closed at one end, and having near its open end a flange;" its interior is "conical at the top and enlarged at the bottom; on the outside around this enlarged part a screw is cut;" 3, a collar "cylindrical both internally and externally and having a flange at its lower end;" 4, a pin to which the horns "are fixed and on which they turn;" it is "a cylindrical piece of iron, on the lower end of which a thread has been worked, and whose upper end is capped with a cone the diameter of whose base exceeds that of the cylindrical part;" 5, a cap "screwed in its interior" and having a hole in the middle for the passage of the pin. These parts are put together as follows:—The cylinder is attached by means of its flange to the socket in any convenient manner; the collar is placed around the pin with its flanged end towards the screwed end; the cap is introduced on the same end, and "both it and the flanged collar retained there by the horns being screwed on to the end of the pin." The pin with its collar is placed in the cylinder, "its conical end fitting the conical cavity," and the cap is screwed on to the lower part of the cylinder. As the cylinder rises up in the socket, a hole for its reception must be cut in the article of furniture. In a plate castor, the attachment to the article of furniture is by means of the flange of the cylinder, which is enlarged

and perforated for such purpose. Modifications are described; the screw of the pin may pass through a hole in the top of the cylinder and there be secured by a nut; the cone may be inverted and work in a cap formed on a bridge which connects the horns. If heavy weights are to be supported, "a small conical bed of "steel" is introduced at the upper end of the cylinder, and a cavity is formed in the base of the cone for the point of the pin to work in. The various modifications are explained at length.

[Printed, 2s. Drawings. See London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 126; *Mechanics' Magazine*, vol. 35, p. 9; *Inventors' Advocate*, vol. 4, p. 405.]

A.D. 1840, December 23.—N^o 8749.

MACKELCAN, FREDERIC PAYNE, and MURDOCH, JAMES. — (*Partly a communication*). — "Improvements of or belonging "to tables, a portion of which is applicable to other articles "of furniture." The improvements refer to tables, beds, castors, and table fastenings. The first table described is one "intended "to be used by a person while in bed." The framing and legs are "principally made of metal tube," the upper part sliding in the under, thereby enabling the table top to be raised or lowered; pins passing through the tubes keep it at the required height. The bottom resembles the top except that it is not quite so long and is furnished with castors. The table is strengthened by "what is "commonly called a truss;" struts support the top and bottom, and braces "keep the uprights parallel and steady." Both top and bottom project on one side beyond the legs, so that the projecting part of the top passes over the bed while that of the bottom passes under it. "This system of bracing by a truss may "be applied to other furniture," for instance, to the head and tester of a bedstead. The second is a table for use on ship-board; the top is composed of a number of small pieces, "each "sufficient to hold a plate or dish." Each piece has affixed to its under side a ball from which a rod descends. The main frame is divided by cross bars into compartments; a little above the middle of each is a cup (with a hole drilled through its bottom) supported by four rods from the corners; each ball rests in a cup, and the rods descend into holes in a lower frame "called the "governor." The four rods at the corners of the top have a nut at the lower end, so that the governor is suspended by them. The four middle rods are longer than the rest and sustain a plat-

form with weights on it; by this arrangement the table top will be always level. "The same principle is applicable to any other article of furniture, as, for example, a berth." The simplest kind of castor consists of an iron screw pin with a conical head which rests and works in a conical cup at the junction of the horns. "The top of the cone, which is downwards, is made cylindrical, and receives a small ring or ferrule with a pin through it to prevent the cup and horns from falling off." Another kind is constructed with two concentric sockets, the inner screwed to the leg of the table, &c., the outer (cast in one piece with the horns) revolving round the inner. At the bottom of the inner is a pivot which turns in an oil cup formed to receive it in the block of the outer. Round the upper edge of the inner is an annular projection, "which, when a lateral pressure is exerted, just touches the inner circumference of the revolving socket;" these parts are "turned, polished, and lubricated." There are two modes of affixing this castor; either by unscrewing a plug in the side of the outer, thereby opening a passage for a screw-driver, or by making the outer in two parts screwed together. Instead of a pivot, a pin may be made the centre of motion as well as the means of connecting the sockets; and a passage for the screw-driver can be made through the bottom of the outer, or the bottom of the pin may be fastened by a nut. A third kind, "adapted for less weighty or inferior furniture," consists of an iron collar screwed to the leg, a socket placed on the leg, and a screw which passes through the socket and collar up the leg; the polished lower end of the screw becomes the centre of motion. A fourth kind is constructed with two wheels whose axle is mounted in an axle block cast with the revolving socket instead of horns. An antifriction wheel may be added to this kind; the axis of this wheel "is a stout pin screwed into the solid metal of the axle block, but having its extremity (reduced and polished) so far protruding into an annular groove in the vertical pivot" as "lightly to garter it." In the construction of castors with two sockets, the inner need not be entirely sunk within the outer; they can be connected by a circular groove and an "annular turn over," by means of an axle pin or by making only the bottom to revolve with the horns. This "combination of wheel work" may be applied to "plate castors." The table fastening consists of two metal plates screwed to two flaps of a table; on the one is cast a solid piece of a "segmental form;" in the other is fixed a

pin serving as the fulcrum of a lever. The end of the lever "is formed into a square-faced block rounded off at the corners." One of the flat sides of the lever comes into contact with a flat steel spring and is held in position by it when the flaps are unfastened; the lever carries an antifriction roller, and, when it is moved on to the other plate, the roller rolls against the curved surface of the segmental block and thereby unites the flaps; the spring now presses against the end of the lever and keeps it firm. "This table fastening is susceptible of various modifications without departing from its peculiar characteristics."

[Printed, 1s. Drawings. See *Mechanics' Magazine*, vol. 35, p. 23; *Inventors' Advocate*, vol. 5, p. 3.]

A.D. 1841, January 11.—N° 8779.

LACEY, WILLIAM. — "Combinations of vitrified and metallic substances applicable to the manufacture of ornaments and the decoration and improvement of articles of domestic utility and of household furniture, also applicable to church windows and ship lights." Ornamental devices are cut or etched on one side of a piece of plate glass and polished in the ordinary manner. The original plane is roughened and the whole surface is silvered over; the silvering is protected by a coating "of copal varnish and white lead or other pigment." The plates are applied to the decoration of any suitable place or article. Knife and fork handles are manufactured of a combination of vitrified and metallic substances; the machinery for such manufacture and the process are thus described:—A pair of stout pincers is bolted to a bench, and a pair of dies (the interior when closed being of the exact figure of the handle) is bolted to the jaws of the pincers. "Before the compression of the glass or enamel is completed, and while it is yet soft," a metallic ferrule is inserted by means of the following apparatus:—Screwed down to the bench is a cast-iron frame having a slot through nearly its whole length to serve as a guide to a lever which propels a carriage carrying a ram whereon the ferrule is placed. To the carriage two centre studs are fixed; "these studs are the ends of a pin that passes laterally through the lever;" they traverse in slots cut in the parallel bars of the frame. By moving the lever the carriage is forced along the guide slot, and the ferrule is thrust into the middle of the dies. The patentee next describes his ornamentation of plate glass for church windows and ship lights, but

does not "profess to have invented anything" therein. The window is formed of a series of vertical and parallel metallic grooved bars without any transverse bars between them, the upper ends "being merely prolonged to form the Gothic arching in the "top." The compartments, formed by the intersection of the curved parts, are glazed in the usual manner; the upper and lower edges of the other plates of glass are cut or ground off to an angle of about 45°. By this arrangement it is only necessary to slide the plates one after the other along the grooves in the vertical bars; the upper and lower plates will require a piece of beading. The bevilled joints are luted with a transparent hard varnish; the square edges are fixed with putty or a composition of copal varnish and white lead. The improvement in ship lights consists in employing ornamented glass instead of that which is commonly used.

[Printed, 1s. Drawings. See *Mechanics' Magazine*, vol. 35, p. 78; *Inventors' Advocate*, vol. 5, p. 35.]

A.D. 1841, January 14.—N° 8788.

LOACH, JOHN.—"Improvements in castors applicable to "cabinet furniture and other purposes." The principal improvement "consists in the introduction of a horizontal anti-friction wheel between the horns and the bottom of the castor "for the purpose of reducing the friction, carrying the weight, "and more effectually supporting the horns." On the front of the horns is a circular projection which presses against the periphery of the anti-friction wheel. On the main pin is a flange which is let into a recess in the bottom of the socket. In a socket castor the head of the pin is rivetted in the bottom of the socket, and in a plate castor into a tube cast on the plate.

[Printed, 6d. Drawing. See *London Journal (Newton's)*, vol. 19 (*conjoined series*), p. 128; *Mechanics' Magazine*, vol. 35, p. 92; *Inventors' Advocate*, vol. 5, p. 51.]

A.D. 1841, February 1.—N° 8823.

PAPE, HENRY.—"Improvements in castors." The patentee constructs his castors with two wheels or rollers to each. "The "invention is not confined to any particular shapes or arrangements of the other parts of castors, but the same may be varied "in pattern and construction to suit the object desired."

[Printed, 6d. Drawing. See *London Journal (Newton's)*, vol. 23 (*conjoined series*), p. 27; *Mechanics' Magazine*, vol. 35, p. 144; *Inventors' Advocate*, vol. 5, p. 85.]

A.D. 1841, February 2.—N^o 8828.

ANDREWS, WILLIAM WARD. — “Improved methods of raising and lowering windows and window blinds, and opening and shutting doors.” The pin of the left socket of the roller works in bearings in its bracket and is kept there by a screw pin. The right socket has a square mortise cut in it to fit on to and over the square axis of a pinion. Attached to the right socket is a box containing the pinion and a toothed wheel carrying a drum for winding the cord. A metal spring cut ring with a boss on it fits tightly on the axis, and coming into contact with a click holds the roller at whatever height the blind is rolled to. The invention, as it regards doors, is a substitute for hinges. An oil-tight box (to be kept always full of oil) is “let into the floor under and into the sill of the door and level with the floor;” there is a plain cover over the box, and a square pintle, working on a pivot in a conical socket in the bottom of the box, projects from the top. The door is hung on the pintle, a metal plate with a square hole in it being screwed on to the bottom; the pintle passes up a few inches into the bottom cross stile. Near the lower end of the pintle is a pinion which takes into a cogged eccentric furnished with two friction rollers; these act against a cross plate which is kept up to them by two spiral springs, while it keeps its rectangular position with reference to the springs by means of a bottom plate which is formed in one piece with it and which is kept steady by three pins working through it in slots. The springs are steadied by being coiled round rods which work through the cross plate. A small spring, “to aid in checking the door in its shut position,” is acted upon by a stud which forms part of the pintle. A conical socket in a metal plate is let into the top of the door and a somewhat similar plate into the lintel. This latter plate is provided with a screw plug having a conical end and capable of being screwed up or down by means of a collar pierced with holes for a turning lever. In a modification of the lower apparatus a rack is substituted for the eccentric, the spiral springs are both placed on one rod and in a line with each other, a spring and indent replace the spring and stud, and a stud is fixed to the rack on the cross plate.

[Printed, 1s. 6d. Drawings. See *Mechanics' Magazine*, vol. 35, p. 175 *Inventors' Advocate*, vol. 5, 93.]

A.D. 1841, March 2.—N^o 8861.

WILKIE, JOHN, and SCHWIESO, JOHN CHARLES.—“Improvements in constructing elastic seats or surfaces of furniture,” whereby the laths and webbing hitherto used as the bearing surfaces of seats, beds, &c. are replaced by bars or laths “made in parts and combined by elastic spring joints.” The bars are secured to the front and back or to the side rails; the springs are applied in the following manner:—Spindles pass “through openings in the turned down ends of the separate parts of the bars,” and are kept in their place by pins; on each spindle is a coiled spring, which, resting against a washer at one end, is retained at the other end by a washer and nut. When the length of the bar is considerable, it should have two, three, or more elastic joints.

[Printed, 10*d*. Drawing. See Repertory of Arts, vol. 17 (*new series*), p. 165; London Journal (*Newton's*), vol. 20 (*conjoined series*), p. 348; Mechanics' Magazine, vol. 35, p. 238; Inventors' Advocate, vol. 5, p. 165.]

A.D. 1841, March 8.—N^o 8865.

SPENCER, THOMAS.—“Improvements in the manufacture of picture and other frames and cornices, applicable also to other useful and decorative purposes.” The improvements are, 1, “a method of manufacturing picture and other frames of copper;” 2, a “method of manufacturing moulds and other patterns from which may be cast ornaments in the materials usually termed by carvers and gilders composition,” and in papier maché; also in glass, earthenware, and china; 3, a method “of making patterns or moulds for ironfounders in copper;” 4, a method of covering metals with gold, silver, platinum, or tin; 5, a method “of cleaning the surfaces of iron that are to be covered with copper;” 6, “a method of producing enriched surfaces” on picture frames, cornices, and interior decorations; and 7, a “method of improving the texture of composition used to cast ornaments for picture and other frames and cornices.” 1. A model is made, and “a series of reverse or intaglio moulds are to be produced from it by the common process of casting.” If the moulds are of “non-metallic or non-conducting substances,” they must be coated with thin varnish, and when nearly dry be “wholly covered and rendered metallic” with bronze powder.

They are now ready to be placed in an "electrical or voltaic apparatus," where a thickness of copper is deposited on the surface. "The copper frame which will have been formed is to be removed," the back "to be filled up with solder," and a rabbet of metal (for the picture and glass) "to be fastened entirely round it." The frame is now "ready to undergo the process of gilding," &c.

2. "An obverse or exact model of the required ornament is procured" and "fastened to a perfectly flat or smooth surface." If necessary both model and surface must be metallized as before described; they are then placed in the voltaic apparatus, and allowed to remain in it until coated to about "one-eighth of an inch." The deposit is taken off and tinned at the back, after which the back is made "perfectly level" by filling it up with lead or cement. "In all cases where molten glass has to be pressed into the moulds, it then becomes necessary to use a metal for the outside coating that is not easily fusible."

3 (which is very similar to 2), does not belong to our series.

4. The claims made are "for the use of bromine and iodine" combined with gold and silver, "for the use of bromine" combined with platinum, for covering lead with platinum, and for covering metallic surfaces with tin, all "in conjunction with voltaic electricity." The particulars of these claims will be found described in their place in the series Electricity.

5. The mode of accomplishing this belongs also to the series Electricity.

6. The enrichments are produced in the first instance on calico or other similar fabric "by pressing it between rollers or blocks having the required pattern depicted on their surface." This fabric "is cut into pieces of the required size and fastened to the surface that is required to enrich." The surface is previously "to receive one coating of a thin fluid" called "thin whiting," and, when this is dry, another coating "rendered much thicker by saturating it with whiting." While the last coating is still wet, "the embossed fabric is to be carefully laid on it and pressed gently down." The surface thus covered "is now ready to be prepared for gilding," &c. Or when the fabric laid on becomes dry, it may be gradually stripped off, and "the exact transcript of the embossed pattern" will be left on the surface of whiting which may be prepared for gilding, &c. Other fluids or glutinous matters may be employed.

7. The improvements consist in adding to the ordinary composition caoutchouc dissolved in spirits of turpentine, "or the menstruum termed asphalte, pyroligneous

"spirit, or spirit of tar. This addition is made to the usual materials in the proportion of one pound of caoutchouc to every six pounds of glue used."

[Printed, 8d. Drawing. See Repertory of Arts, vol. 16 (*new series*), p. 287; London Journal (*Newton's*), vol. 20 (*conjoined series*), p. 166; Mechanics' Magazine, vol. 35, p. 282; Inventors' Advocate, vol. 5, p. 180.]

A.D. 1841, March 22.—N° 8891.

WINFIELD, ROBERT WALTER. — "Improvements in or belonging to metallic bedsteads, a portion of which may be applied to other articles of metallic furniture." The first part of this invention relates to connecting joints made of iron corner pieces to frames and pillars. If the corner pieces are of wrought iron, two sides of each pillar are forged or otherwise reduced to flat surfaces at right angles to each other; these have at their upper and lower sides ridges or collars, or a ridge above and a collar below to hold securely the flattened ends of the frame rails, which are formed with "a lateral feather," called by the patentee "the sacking flange." If the corner pieces are of cast iron, either they are fixed to the top of the legs with ornamental bosses or collars cast on their tops, or the legs and pillars are "forcibly drawn" through holes in their middle. Recesses are "formed out of two sides of the square for the reception of the rectangular flange" of the frame rails. These junctions are susceptible of various modifications which the patentee describes, adding,—"The foregoing examples of casting (or otherwise forming) the corner pieces of metallic bedsteads must be only considered as illustrative of a system of joining or connecting the metallic frames to the corner pieces, by making holes or recesses in the latter of the same configuration as the cross section of the iron or other material employed in the construction of the framing." If the legs, pillars, and frames are tubular and the corner pieces of wrought iron, the legs and pillars are united to the latter by means of solder and pins passing through plugs forged in one with the corner pieces; plugs are pinned and soldered to the frames, and to the ends of the plugs are forged flanges which fit into corresponding recesses in the corner pieces, the whole being bound firmly together with screws. Modifications of this arrangement also are detailed. If the corner pieces are of cast-iron, the plugs of the rails are forged with rectangular flanged plates which fit into rectangular recesses in the corner pieces; this arrangement too

may be modified. Cast-iron corner pieces are connected to "angle-iron frames" by welding on the latter cubical pieces of metal, the projecting extremities of which are squared to fit recesses in the former; this too is susceptible of modifications. A joint readily taken to pieces is formed by making recesses at the sides of the corner pieces for the reception of a double clip attached to one of the side rails. One of the recesses is also adapted to admit a square plate on the other side rail: a cylindrical plug, fastened to the tubular leg, has on it a square flange which fits into a corresponding recess in the corner piece above the flange; the plug resumes its cylindrical form, having its upper end cut into a hollow screw; the tubular pillar which is secured to a cylindrical plug, having at its end a screw with a square head, is turned by a spanner into the hollow screw. The various connecting joints described "are equally applicable for combining the frame of the "tester." Modes of stretching the sacking are next described. To the top and bottom rails is added a round rod, either solid and turning on its axis or a tube turning on a central rod. Above these at head and foot is a flanged rod, formed at the ends with collars or rings which pass over the pillars and lodge on collars thereon. The pillars are divided near the middle, the upper part screwing into the lower. The sacking is made with a loop at the upper end for the admission of the flanged rod; it is passed round the rollers and buckled to the flanged rod at the foot; it is strained to the side rails by straps and buckles and at the head by unscrewing the pillars. A second mode is to make the sacking "of greater area than the frame," pieces at the corners being cut out to make it lie smooth over the surfaces of the frame rails. Four tension bars are screwed to the pillars; buckles and straps are sewed to the sacking; the straps are passed round the bars and buckled. Or the sacking edges may be formed into loops and rods passed through them; the straps are passed round the rods, and the tension bars are "pulled tight and buckled." A third mode:—Tension bars, forked to clip the legs and slide up and down against them, are tapped to receive a screw which turns in a pivot hole in the frame rail; the bars are passed through loops in the sacking and the screws are turned. Or three or four inches of the upper part of the legs may be cut into a screw and provided with a travelling nut; a spanner applied to the nut will force down the head of the bar. Fourthly, the stretching may be effected by means of the screws employed to connect the pillars to

the frame, by the aid of ferrules, which may be either screwed into or cast in one with the corner pieces. The sacking may be suspended to a tension bar "in such manner that it may be readily elevated or depressed to the desired angle or curve, that portion towards the feet being fastened by straps or any convenient manner." An improved stretcher is divided in the middle into two parts; these ends are cut into screws, one right, the other left handed; they are united by a corresponding hollow screw shaped on the outside hexagonal, so that it may be turned by a spanner. A screw motion is given to one or both ends of an ordinary stretcher thus:—A rectangular block, or a stout ring provided with a lug, surrounds a side rail; through the lug passes a square-headed screw which enters the tapped hole of the stretcher; two fixed collars prevent the screw from moving longitudinally. The patentee prefers "the use in some cases of three, four, or more wheels or castors connected to one revolving frame." The vertical pins are passed through an annular plate which projects "around the interior of a dome-shaped case;" the fastening screw is at the top of the dome. Or the pins may be fixed at the end of a cross frame."

[Printed, &c. *See* Drawings. *See* *Mechanics' Magazine*, vol. 35, p. 361; *Inventors' Advocate*, vol. 3, p. 212.]

A.D. 1841, March 29.—N° 8906. (* *)

LINDSAY, JOHN.—"Improvements in covers for waterclosets, night-stools, and bed pans."

A circular piece of wood is surrounded with a strip or strips of woollen cloth or other elastic substance. A band of chamois leather, secured at one end by hooks, is passed above this. A hole is made in any part of the board, and a peg fitted to it. "When the extinguisher is pressed down, keeping the peg out, the air escapes through this hole, and when sufficiently low, on putting the peg in all smell is prevented, and it is hermetically sealed."

[Printed, &c. No Drawings. *See* *London Journal* (*Newton's*), vol. 20 (*originated series*), p. 269; *Mechanics' Magazine*, vol. 35, p. 316; *Inventors' Advocate*, vol. 3, p. 227.]

A.D. 1841, June 28.—N° 9012.

NICKELS, CHRISTOPHER.—"Improvements in the manufacture of mattresses, cushions, paddings, or stuffings, and in carpets,

"rugs, and other napped fabrics." The first part of the invention relates to the manufacture of stuffing in which the lengths of the wool or cotton employed "stand on end" and are "closely packed together" in a suitable frame; their ends are caused to adhere together and to surfaces of fabric at top and bottom by means of india-rubber cement; the stuffing thus produced is enclosed in a case. The machine "for packing yarn in parallel lines and surfaces" is composed of 1. the framing; 2. four racks raised or lowered at the same time by cog wheels and a crank handle; 3. a quadrangular frame furnished with two bars, having numerous parallel slits to receive yarn and at the corners holes through which pass "the projecting studs at the tops of the racks;" 4. a series of "upright, narrow, and thin plates of brass" or other metal; 5. bars to separate the plates at bottom; 6. screwrods passing through holes in the lower ends of the plates and through holes in the bars; 7. rods passing through holes in the upper ends of the plates; and 8. washers to keep the plates apart above. In working with this machine several frames are used, the ends of the yarns being inserted into the slits in the bars. The workman having placed a bar in each space between the plates, puts a frame on to the racks and lowers it until the layer of yarns therein rests on the bars; he then introduces in the space between each pair of plates on either side a thin plate of brass or other metal, "till the upper surface of the yarn is covered by such plates;" he next lowers the frame, by which means the yarns previously brought down will be left between the bars and the thin plates. He now removes the empty frame, places another on the racks, and repeats the process "till he has filled the machine to the extent required," when he introduces a rod through holes drilled in each pile of plates. He next withdraws the top combining rods, placing on the parallel plates bars "which have each two holes formed through them at each of their ends," so that they may slide down on the plates, being held to the position into which they are pressed by set screws. The layers of yarn "may be cut away from each other by passing a thin knife" between the slid bars, "and by a sawing motion the workman will cut off a length of the various layers of yarn equal to the width" of the covering plates. The layers are now in a position for allowing their ends to be coated with cement and to have a surface of fabric applied. The plates may be arranged to cut off lengths equal to two covering plates. A second part relates to the production of napped

fabrics by combining the ends of the yarns by felting. A wire card is used to comb out the projecting ends, and suitable felting fibres are laid on the surface to be felted by "bowing," or by "several layers of the film of the fibre produced from a carding engine." The workman presses the fibres down by hand, continuing the process, and "using such means as are usually practised by felters," until he has brought the felt to the degree of substance he requires. A third part relates to carpets, rugs, &c.; these are woven, "but have the pile or nap longer than usual, in order to allow of a surface being removed by cutting, and yet leave a sufficient nap on the one produced by weaving." India-rubber cement is applied to the surface of the nap; a surface of fabric is put on the top, and then by cutting or splitting two napped fabrics are obtained. Instead of using cement the surface of the nap may be felted before cutting.

[Printed, 1s. 8d. Drawings.]

A.D. 1841, November 2.—N^o 9130.

MACAULEY, THOMAS. — "Improvements in bedsteps, which are convertible into other useful forms or articles of furniture." The first set of bedsteps described consists of three steps; it includes a commode and is convertible into a chair. It is composed of 1. an outer case; 2. a bottom step hinged into the sides of the case; 3. two doors on the top edge of which the step rests when down, and which also are hinged to the sides of the case; 4. a middle step turning on hinges about three inches from the back of the case and resting on the top of the enclosed commode; 5. a folded cushion placed in a recess behind the middle step; and 6. a top step turning on hinges in the back of the case and resting when down on the top of the sides. The cistern is arranged round the pail which is protected by a double rim or case. When the top step is being turned up, it gives motion to two tooth-sectors gearing into cog wheels whose prolonged axes form the axes of two three-leaved hinges; the inner leaf of these is screwed to the sides of the case inside near the top edge, while the other two leaves clasp an arm rest; a projecting piece at the lower ends of the sectors catches against a guide, thereby preventing the sectors from being drawn too far back and enabling them to serve as supports to the back. The mechanism by which simultaneously the bottom step is liberated and the doors are

thrown open is as follows :—Immediately under the hinge of each door a brass barrel “is let into the side edge of the door and side of the case, to the extent of a quarter of its diameter on each side,” and secured to the bottom of the case so that the axes of the barrel and hinge coincide. Within the barrel is a spring coiled round an arbor “which projects outside a little way below the bottom of the barrel;” on to the square part of this projection is passed the shoulder piece of a wing plate, the rectangular part of which is screwed into the bottom edge of the door above it; this plate, secured to the projection by a screw nut, is limited in its range of action by a rim piece attached to the barrel, so that the door cannot turn “to a greater extent than to a right angle with the plane of the front.” Screwed to the bottom of the case are two spring catches “turned up to catch two plates affixed to the under edges of the doors;” a broad slip of wood, whose head is a knob, runs in a groove down the inner part of the case and rests at bottom on the catches. The doors are provided with castors, “the pivots of which are prolonged and pass upwards through convenient channels in the doors to the top, where they terminate in buttons.” A second set consisting of three steps includes a commode, bidet, washstand, and dressing table. The doors are hinged to the front of the commode which forms a separate box, and can be drawn out from the case. “When the second step is turned up, only half of the seat of the commode is disclosed.” The bidet occupies a small space in the upper step and can be drawn out and removed; it is supported when in use by the following means :—At one end it has on the outside a wedge-shaped groove which slides upon a wedge-shaped knob on the under side of the bottom step, “and at the other or outside end it is upheld by two legs hinged to it beneath.” The rest of the upper step is occupied by the washstand and dressing table, “which are included in the drawer or box, the ends of which overlap the sides of the external case a little.” The drawer is lined with zinc and is divided by a partition from back to front; the cover of the larger compartment contains a basin and soap dish; through the orifice covered by the latter water is supplied to the space or cistern round the basin; in the cover of the smaller compartment is a brush tray, “on lifting which an oblong orifice is disclosed, through which the foul water is emptied into an oblong can.” A small door at the right-hand corner covers a tap by which water can be drawn from

the cistern. A lid, hinged to the back of the drawer, comes down over the whole, and on its under side is a looking-glass "attached to a back piece which slides in a vertical groove." To afford a support to the lid when thrown back, "about one-fourth of the top step is made to fall back on hinges." A third set, consisting of three steps, is convertible only into a chair. The middle step which forms the seat is fixed. The top step, stuffed or covered on the under side, turns on wooden pins or dowels. The bottom step is secured to the front feet with iron pins, one of which can be drawn out, so as to make the step removeable; this step is divided into two parts hinged together, allowing the smaller part which carries the legs to be doubled back; to support this step, when turned under the second step, two short stays "project in an angular direction from the back of the front feet." In the back of the second step is a folded cushion. A fourth set, composed of only two steps, contains a commode and is convertible into a chair. The outer case encloses the commode in a separate box. The bottom step turns on hinges within the outer case and is supported when down by doors as before described. The top step hinges in the back of the case; immediately behind the commode a space is left for a doubled cushion, and on the under side of the top step provision is made for securing the cushion when in use. Vertical recesses are left between the sides of the commode and outer case to receive the arms which are fastened to the under side of the top step. The back can be made to recline at any angle by fixing "to the edge of the back of the chair, but so as to fall inside of the outer case when that back is brought down," a quadrant or sextant of brass attached to a piece of wood of the same size and shape; the face of the curved part carries a rack, "the teeth of which are bevelled outwards;" a catch taking into the teeth is fastened to the inside of the case near the top; a strong spring on the under side strengthens the hold of the catch, and a button is attached to the tail of the catch and projects on the outside of the case; by pressing this button the angle of the chair may be altered. The doors may be hinged to the middle of the front of the case and open the reverse way. For the last two mentioned commodes the patentee uses "a water sealed tin or zinc pail;" about two inches from the top is a second or double rail into which the lid dips; the top edge is wired, and "just under the wire runs a piece of woollen or other elastic cord all round; a piece of list is also fastened round the

"under edge of the wooden seat." The metal lid has a small **T** handle, by means of which a second cover of turned wood is readily attached to or detached from it.

[Printed, 10*d*. Drawing. See also *Mechanics' Magazine*, vol. 38, p. 113.]

A.D. 1841, November 11.—N° 9152.

BOOTH, JOHN PETER. — "Improvements in the manufacture of a substance or compound fabric, which will be applicable to the making of quilts, coverlets, and wadding for purposes of clothing or furniture." The substance is down "obtained from any bird or animal," but by preference from goose feathers. When the down has been dressed and prepared in any of the customary methods, it is arranged in a layer of a convenient thickness and placed within a case consisting of two sheets of any suitable material; it is retained therein by stitching or quilting the case, which may then be covered "with any ornamental fabric, such as satin, silk, velvet, chintz, or other material."

[Printed, 6*d*. Drawing. See *Repertory of Arts*, vol. 18 (*new series*), p. 205; *London Journal (Newton's)*, vol. 20 (*conjoined series*), p. 353; *Mechanics' Magazine*, vol. 36, p. 463.]

A.D. 1841, December 16.—N° 9182.

STEWART, JAMES.—"Improvements in the construction of castors." This castor, "from the peculiar combination and arrangement of its parts, possesses a greater degree of strength, stability, and freedom of motion than has hitherto been attained." On the socket or plate is affixed or cast a tube closed at the upper end "so as to afford a good bearing" for the spindle or axis of the horns. The tube is longer or shorter "according to the nature of the piece of furniture to which the castor is to be applied." The spindle extends from the bearing down the tube through the socket or plate, and through the solid part of the horns which is fixed to its lower end "as firmly and securely as possible, so as to cause the spindle and horns to work as if constituting one solid piece." The spindle is kept in its place in the tube by a screw which passes through the tube and into a groove cut round the upper part of the spindle. A friction roller which works against the under surface of the socket or plate is placed so that the "central line of its axis,"

the "central line of the spindle," and the "central circular section" of the castor wheel "shall all lie in the same plane," and that it shall be "intermediate in its position" between the spindle and the axis of the wheel."

[Printed, 6d. Drawing. See Repertory of Arts, vol. 18 (*new series*), p. 144; London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 89.]

A.D. 1841, December 21.—N^o 9203.

FOURMENT, ADOLPHE.—"Improvements in castors for cabinet furniture and other purposes." This improved castor is composed of a socket formed with a cup below, a ball which works within the cup, and a ring or lower part which is screwed on to the cup after the ball is put in. The cup has "three points of contact cast or otherwise raised" on its inner surface; these "rest on the ball and enable it to turn freely while supporting the superincumbent weight." Cup and ball, either or both, are case-hardened, "as circumstances may be thought to require, where any extraordinary quantity of friction is anticipated."

[Printed, 6d. Drawing. See Mechanics' Magazine, vol. 37, p. 127.]

A.D. 1842, March 4.—N^o 9275.

CLEMENTS, JAMES.—"Improvements in composition for ornamenting glass and picture frames, and articles for interior and other decorations, also for the manufacture of toys and other fancy articles." This invention "relates to the application of paste produced from potatoes, in combination with other suitable materials," for the above purposes. The potatoes are to be "cooked as if intended for the table," bruised, and mixed with some pulverised article, such as fine sawdust, turf, or the waste bark from a tanyard, ground very fine, or any other fine powder which can be had at small cost, the whole being worked into a fine paste by rolling and beating." The composition is then fit for use, and may be cast into ornaments by the aid of moulds commonly used for such purposes.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 1 (*enlarged series*), p. 43; London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 119; Mechanics' Magazine, vol. 37, p. 475; Record of Patent Inventions, vol. 1, p. 87.]

A.D. 1842, March 7.—N° 9283.

KANE, FRANCIS.—“Improvements in the construction of fastenings for the posts of bedsteads and other frames.” The fastening is effected by means of a binding plate and screw; the former is a bent plate having at each end a projection which enters a hole or recess in the inner side of each rail. A screw nut is introduced into the post by forming an oblique mortise hole from one of the mortises in the post which receives one of the ends of one of the rails; the screw passes through the binding plate and nut. This fastening may be used for holding together similar parts of chairs, sofas, &c.

[Printed, 6d. Drawing. See Record of Patent Inventions; vol. 1. p. 113.]

A.D. 1842, May 9.—N° 9346.

WILSON, JACOB. — “Improvements in bedsteads,” whereby the tester “can be raised or lowered to any extent within certain limits.” The bed frame and head and foot boards are made in the usual way, except that the posts should not be higher than four feet six inches. Two boxes about fourteen inches wide and four feet high are fixed, one at the head, the other at the foot-board framing. In the middle of each box is a screw rod working in and through a square head or nut “which fits exactly into the space between the two cheeks of the box, or may be made to slide in grooves made between the cheeks.” To the upper ends of the nuts two metal rods are attached, which support the tester: by turning the handles of the screw rods (both at the same time) the rods and tester ascend or descend. A spring knob or catch prevents the handle and screw rod from turning when not required.

[Printed, 6d. Drawing. See Record of Patent Inventions, vol. 1, p. 278.]

A.D. 1842, May 23.—N° 9358.

COOK, BENJAMIN, junior.—“Improvements in the construction of bedsteads, both in metal and wood.” The bedsteads are constructed in the ordinary manner; the improvements consist in coating or casing the pillars and other parts of the framing “with paper, pasteboard, papier maché, or other similar composition, or attaching to such framing figures or devices of a similar material, and afterwards ornamenting the external sur-

" faces of the same by painting, japanning, gilding, silvering, varnishing, and otherwise decorating them."

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 22 (*conjoined series*), p. 216; Record of Patent Inventions, vol. 1, p. 294.]

A.D. 1842, December 22.—No 9565.

MILLER, TAVERNER JOHN.—"Improvements in apparatus for supporting a person in bed or when reclining." The apparatus (a back rest) may be affixed to the head of a bedstead; or a bedstead may be constructed "combining therewith apparatus, in order that persons in bed or reclining thereon may obtain support in varied positions." An upright is fixed to the head rail of the bedstead by a screw clamp, and to the head board by a screw which passes into a bar; to this bar is affixed a vertical board, and a set screw "which passes through the upright and rests against the bar," causes the board "to press against the head board." The back rest is "a quadrangular frame stuffed on the surface;" it moves up and down by means of a counterweight hanging behind the upright; a cord fastened at one end to the upright passes under a pulley on the top of the rest, and over a pulley on the top of the upright; the other end is secured to the weight. The rest is supported at the back in the following manner:—A frame is hinged to the top of a board, which is screwed to the vertical board, and a sliding board connected to the back of the rest moves freely in grooves in the frame. "The object of this arrangement is that the back rest may go well up out of the way, and when down, the length of the frame between the head of the bed and the rest, may allow the rest to stand beyond the pillow." Or "simple rods, hinged to the back of the back rest, and to the head of the bedstead" may be employed. The upright may be dispensed with, and the parts connected to it may be attached "to the head board and to the top head-rail." Arms may be combined with the rest; they are hinged at their rear end to the posts or head board; they carry each a bent bar; these at their other ends are combined by a cross bar, "which acts as a counterbalance to the arms;" "two curved upright frames" are affixed "to the beam at the head of the bedstead;" these serve as guides to the bent bars. In the second case, there are two frames to the bedstead; the upper, on which the bedding is placed, is divided into two parts hinged together. The lower of the two parts is mounted on four castors,

which move along the side rails of the bottom frame; the upper part "is nearly balanced by means of a weight, the weight "slightly preponderating." The upper part is raised or lowered by the person in bed by means of cords, "placed in a convenient "position for the invalid to take hold of," and connected to the weight by a system of pulleys. Rods, hinged to the upper part and to the "head framing of the bedstead," support the former when raised up.

[Printed, 2s. Drawings. See Repertory of Arts, vol. 2 (*enlarged series*), p. 96.]

A.D. 1843, January 26.—N° 9601.

BIELEFELD, CHARLES FREDERICK.—"Improvements in suspending or hanging looking glasses and other articles requiring "like movements." The frame is suspended from a cross piece at the back either to the upper end of a pillar or a sliding upright by a pin joint, the axis being a screw or otherwise. The upright is "securely retained in any required position or degree of elevation, either by a screw which passes through the hollow pillar, near the top, or by "sliding stiffly" therein, or by a coiled spring affixed to or around its lower end. In the first arrangement a curved metal shield, introduced between the screw and the upright, prevents any injury to the surface of the latter; in the second, woollen cloth may be put round the lower part of the upright, and leather at the interior of the upper part of the pillar. To facilitate the raising of a heavy glass a rack is fixed to the upright and a cog wheel to the pillar. These improvements are applicable to fire-screens.

[Printed, 8d. Drawing. See Engineers and Architects' Journal, vol. 6, p. 399.]

A.D. 1843, January 28.—N° 9614.

WEILD, WILLIAM.—"Certain improvements applicable to "windows, blinds, and curtains, parts of which improvements "are also applicable to doors." Five varieties of sash fastenings are described, the object aimed at in most being to prevent the opening the window from the outside. In the first, the sashes are drawn together by an eccentric on one sash, "brought round "against the back" of a segmental projection on the other by a lever; the eccentric is enclosed in a box. In the second, the sashes are united by a dovetail wedge; a rack with bevelled edges

and back is "fixed vertically" on one plate; the rack enters a dovetail also fixed vertically on the box of the other plate; a bolt sliding in the box is pressed by a coiled spring against the tooth (below the dovetail) of the rack. A tooth, attached "to the middle bar of the upper sash," enables the sash to be partly opened, and thereby securely held by the bolt. The third resembles the fastening in common use; the interior edge of the segmental projection is cut into a rack, and a bolt sliding in the lever is pressed against the rack by a coiled spring. In the fourth, the fastening is made "by the action of a circular wedge attached to one sash on the inclined side of a box on the other side;" a cylindrical bolt, with the wedge fixed to its end, slides in a box, "and also turns on its axis;" a coiled spring presses it outwards; the bolt being pushed forward, the wedge enters the box on the other sash; the bolt is then turned, and the wedge is thrust into the place prepared for it. In the fifth, a plate is attached to the groove in which the sash slides; on the plate is a lever having its upper side rounded; a spring coiled round the axis presses the lever downwards; the sash descends readily, but "becomes wedged" on an attempt to raise it; by turning a knob the lever is depressed again. Six arrangements of rack pulleys, the object in most being to disengage readily the slider:—In the first, the slider moves on the flanges of the frame; attached to the slider is a lever, one end of which is pressed against the teeth by a spring; the other end terminates in a thumb plate. In the second, the lever is jointed to the interior of the slider; the axis of the pulley is hollow, and a bolt passes through, one end bearing against the lever, the other being a projecting knob. In the third, a bolt working in the hollow axis is pressed against the teeth by a coiled spring; the slider is disengaged by pulling a knob on the top of the bolt. In the fourth, the rack is in one side of the frame; the square end of the hollow axis slides in the frame slot; an axis passes through the hollow having at the upper end a knob, and at the lower a lever which is pressed against the teeth by a coiled spring. In the fifth, a screw is substituted for the rack; a screw box with a bevelled toothed wheel on the top works on the screw; the slider has on each side of the screw box an arm bored for the free passage of the screw; an axis passes through the hollow pulley axis, carrying at the lower end a bevelled tooth wheel, and at the upper end a knob. In the sixth, which is, similarly constructed to the first, the pulley is much larger and

carries a winch handle for raising or lowering the blind. "A new method of attaching blinds to rollers:"—The roller is formed of two semi-cylindrical pieces; in the plane side of one is a groove, on that of the other a feather; the end of the blind is placed between; and the pieces are fastened together by metal caps; the formation of the planes may be varied. "Improved furniture, for roller blinds:"—1. A circular box is fitted on the right end of the roller; a lever, one end being "external to the box," presses with its other broad end (coated with leather) against the internal edge; the boss of the bracket serves as the axis of the lever; the outer surface of the boss not being concentric with the hole in its interior, the lever "describes a circle excentric to that formed by the edge of the box;" when the cord (fastened to the outer end of the lever) is loosed, a spring brings the lever back to its position, while a stop prevents it from being pulled too far. 2. The mechanism is on the left end of the roller. Jointed to the bracket is a lever, having its lower edge covered with leather, and curved to correspond with the edge of the box on which it rests; a screw box works on a screw which turns in bearings on the bracket; to the under side of the screw box is fastened a spring which presses against the lever. 3. The right bracket is much longer than the left, and carries at the lower end the mechanism for regulating the raising or lowering the blind; two small rods project horizontally; a third, between and parallel to the others, moves to and fro in a slot in the bracket, its movement and tension on the cord being regulated by a screw; the cord passes in front of the fixed rods and behind the moveable one. 4. "Fixing the blind roller in its bearings, and removing it from the same;" one side of a bearing is prolonged vertically; a spring lever is so shaped and placed as to come into contact with the bearing and prevent the axis of the blind from passing out. "Spring hinges for closing doors:"—1. To the bottom of the door is fastened a shoe having a staple on which the door turns; the box containing the mechanism is screwed into the floor; the socket is formed in a vertical axis, carrying arms furnished with antifriction rollers; a metal sliding plate, whose sides are provided with similar rollers, is pressed against the first rollers by a series of bow springs placed in pairs and threaded on a rod; the force of the springs is regulated by a nut and screw. 2. A piston travels to and fro in the box; its movement is guided by its rod passing through the end of the box; a spring is coiled round the rod, one extremity

bearing against the box, the other against the piston; two projections on the sides of the piston pass through the sides of the box, and press against rollers which work on a plate screwed to the floor immediately under the staple; the staple turns in a cup in the plate. 3. Two curved arms are fixed to the socket axis; on the concave sides of these two, others press provided with antifriction rollers; a rod fixed to the outer arms carries a piston, which works in an inner box pivoted to the outer one; a coiled spring bears with one extremity against the end of the inner box, the other against the piston. 4. "Applicable to doors opening only in one direction:"—A roller is mounted on one hinge, "very near the joint;" a cylinder containing a piston is fixed to the door frame "immediately opposite the roller;" a coiled spring, whose force is regulated by a screw, presses the piston against the roller. A mode of hanging a door which has a spring hinge:—A socket is screwed to the top of the door frame; the axis slides in a metallic piece (fixed to the door) and rests when lowered on a bearing therein; a pin projecting from the side of the axis passes through a moveable metallic piece (the end being flush with it), which is screwed to the fixed piece when the axis is raised into the socket. A method of preventing draughts from entering under the bottom of doors and folding windows:—A metallic box is let into the bottom of the door or window; in the box is a rod sliding in supports; at one end of the rod is a bolt, "the edge of which is inclined like that of the ordinary door fastening;" a coiled spring bears against one of the supports; fixed to the sides of the box are cranks, one end being jointed to the rod, the other to an iron plate, the bottom of which is furnished with some soft material. "A method of rendering windows more air-tight;"—Grooves are cut in the sides of the sash; three springs are fastened to the bottom of each groove; and a lath, whose edge is coated with some soft material, is placed in each groove. Raising and lowering Venetian blinds:—the mechanism consists of a horizontal axis, supported by bearings and a bracket; bevelled wheels, fitted on the axis and gearing into others fitted on vertical axes; spirals fixed on the ends of the vertical axes; the distance between the threads of the spirals "is somewhat less than that between the laths of the blind;" and an endless cord passing over the rack and other pulleys. Methods of drawing curtains:—1. Two series of levers, called lazy tongs, are secured, one to each end of a board; the pins forming the middle joints of the tongs, are pro-

longed downwards into hooks, all of which, except the outer ones, pass through slots in the board; the outer ones are fixed in the board; an endless cord, passing over a rack and other pulleys, is so fastened to the moveable end of each series, that both curtains will be drawn by the same movement. 2. A semi-cylindrical groove is formed on the upper side of the curtain pole; an eye, through which cords pass, and to which they are fastened, is fixed to the under side of the top of each ring; the eyes slide in the groove. To prevent the shaking of sashes:—A metallic plate is fastened to the bead, and another to the sash; on the latter is a thumbscrew turning in bearings; on the screw a bar works, having an end bent at right angles; by turning the screw the end of the bar presses against the bead plate.

[Printed, 2s. Drawings.]

A.D. 1843, February 11.—N° 9628.

BADGER, JONATHAN.—“Improvements in the construction of “bedsteads for invalids.” The frame which bears the mattress is composed of four parts, each quadrangular, and having boards fixed at the sides; the two lower are hinged together, the upper two move on axes supported by uprights on the upper face of a bottom frame. Two curved plates (with grooved peripheries) are pin-jointed to the bottom frame; and two bars, affixed to legs and joined in the middle so as to form a cross frame, receive the curved plates in slots at their ends, and support them on projections which enter the grooves. In each plate and slot are holes for the insertion of pins. The mattress is made in four parts, corresponding to those of the frame. The raising or lowering the whole bedstead is facilitated by a lever fixed on the under surface of the bottom frame. The parts of the upper frame are made to change their position in the following manner:—Two connecting bars are hinged to the under side of the head part; the other end of each bar carries a strap, which is made fast to a drum, whose axis turns in bearings on either side of the under part of the bottom frame; a winch handle turns the axis, and a ratchet and click retain it in any position, while a cord prevents the part from being raised too much. A board is hinged to the under side of the part next to the head part; two cords, fastened at one end to this board, pass over pulleys to two drums turning on an axis “in bearings on the under side of the bedstead.”

this axis also is provided with ratchet and click and with a handle.

[Printed, 1s. 2d. Drawings.]

A.D. 1843, March 16.—N° 9662.

TUPPER, ARTHUR CHILVER.—“Improvements in the means “ of applying carpets and other covering to stairs and steps, and “ in the construction of stairs and steps.” In the projecting part or nose of the stair or step an opening or slot is cut “through “ which the carpet is drawn, leaving a space of wood or of what- “ ever material the stairs are constructed as the projecting part “ exposed to the action of the feet.” The part of the stair where the carpet passes through the slot “should be slightly cut away, “ so that the carpet when applied should not be raised higher “ than the projecting part.” The stair rod is made with a perpendicular piece; on the upper portion of this is a notch whereon the projecting part rests for support; this piece may be made in various forms. The second part of the invention “relates to a “ mode of constructing stairs or steps by having the projecting “ parts (or what are called the nozings) of the stairs or steps “ moveable.” Plates having studs on them are screwed at each end to the nozing; to the front part of the stair are screwed corresponding plates with openings into which the studs pass; each opening “is enlarged at one part to allow the stud to pass “ into it,” and by sliding the stud into the smaller part of the opening the plates will be securely united. The method of attaching the nozings to the stairs may be varied:—Descending rods with a double curve at bottom may be inserted into each nozing for the purpose of supporting it and at the same time keeping the carpet in position without the aid of stair rods. “The “ nozings may be ornamented to correspond with the style of “ architecture of the building where they are applied.”

[Printed, 10d. Drawing. See Engineers' and Architects' Journal, vol. 6, p. 234.]

A.D. 1843, May 16.—N° 9730.

THOMPSON, JOHN.—“Improvements in bedsteads and couches “ for invalids.” The “particular features” of this invention “are so connecting an outer framing to a bedstead or couch” “a sheet may be stretched from the outer framing over the

bedding," by which means the patient may be raised from the bed, or the bed lowered from the patient, whilst the bedding is being adjusted or made. The bedstead is a rectangular frame with cross rails or straps or sacking; and "mounted on four legs with "castors." The two end rails have grooves cut in them. The outer frame is composed of "four vertical pillars firmly connected "together by three horizontal rails," one of which "occupies the "closed side of the frame, the opposite side being open, that is, "without a rail." The end rails are formed with a ledge which enters the corresponding groove, so that the bedstead can be slid in and out. "Two moveable side rails are attached to the outer "frame by vertical screws mounted in the pillars," and the screws "pass through screw boxes in the ends of the moveable "rails." Two edges of a sheet are fastened to the moveable rails "by loops passed over studs in the under side;" and by turning the screws with a winch the side rails will be drawn up, carrying with them the sheet and the patient. The patentee does not confine himself to the above arrangement, as the same may be varied in several ways without departing from the principle of the invention.

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 318.]

A.D. 1843, June 6.—No. 9758.

FARMER, RICHARD.—"Improvements applicable to fixed and "portable waterclosets and beds or bedsteads, a part or parts of "which improvements are also applicable to raising and forcing "water." This invention comprises, 1, "a stationary water- "closet;" 2, "a portable watercloset;" 3, "a rotary pump;" 4, a "method of tightening the sacking" of bedsteads, and the application of the same method to securing the rotary pump to a cistern or reservoir. The present series relates only to 2 and the first part of 4. The case of the closet is divided into two portions by a partition, the basin and pan occupying the front, the cistern and pump the back division. The pan is removed by a door in the front portion. The cistern (of lead or zinc) is screwed to the case. The pump is "a cylinder closed at bottom and furnished "with a solid piston;" it "is fixed in the bottom of the cistern." The cylinder "is perforated with holes immediately above the "bottom of the cistern; and the cover of the cylinder is also perfo-

"rated." A pipe ascends from the bottom of the cylinder through the partition to the scatterer of the basin, and another pipe, connected with the upper part of the cylinder, "passes to the top of the cistern and opens into the air." The piston rod is united by a link to an arm or bracket which is attached to the lid of the closet; "it may be furnished with a cross arm, working in grooves on the sides of the cistern, in order to guide it." The action of the closet is effected by raising and lowering the lid. The patentee sometimes introduces his rotary pump instead of the one described. 4. The side rails (to which the sacking is attached) are cylindrical, and have fixed on each end a circular plate; this "is perforated with holes, and is furnished with a pin which is in a line with the axis" of the rail. The pin "enters a hole in the bedpost, and serves as the axis" on which the rail turns. "A hole is formed in the bedpost at the same distance from the axis of motion as the holes, and of the same size as the said holes," and a pin or cotter "is introduced through that one of the holes which corresponds with the hole formed in the bedstead."

[Printed, 1s. 2d. Drawings.]

A.D. 1843, June 15.—N^o 9790.

BATE, GEORGE.—"Improvements in apparatus for raising and lowering window blinds and maps." There are three methods of carrying out this invention. In the first the axis on the right end of the roller is pressed on by a lever, which too is pressed on by a spring, the pressure being regulated by a screw. The lever is connected by a link to an upper lever carrying a pulley over which the cord passes from the barrel; the cord is kept in the groove by a stop and spring. The blind is drawn down by a cord at bottom, or it may descend by its own weight by pulling a cord fastened to the outer end of the upper pulley. In the second the mechanism is at the left end of the roller. On its axis is formed a screw whereon is screwed a piece serving as the axis of a ratchet wheel. Between the ratchet and the socket are a washer of horn and a washer of metal, against which a spring presses. A sliding stop, with a slot in it and lined on the under side with some soft material, moves on a fixed stud. In the third the mechanism is also at the left end; it is composed of a ratchet wheel fixed on the roller axis; a lever moving on a hollow axis;

a leather stop against which the lever rests; a boss sliding over the hollow axis and kept in place by a screw; a ratchet wheel on the boss and taking into the lower wheel; and as before, washers of horn and a washer of metal with a spring pressing against it.

[Printed, 1s. Drawings.]

A.D. 1843, July 6.—N^o 9822.

NEWBERY, GEORGE JOHN. — "Improvements in the manufacture and construction of window blinds, screens, shutters, and other similar articles, parts of which improvements are applicable to other purposes." The articles are formed of perforated sheets of leather, parchment, paper, cloth, silk, or other textures, and some of perforated metal. The perforations are made "in every variety of ornamental forms or devices" by cutting or stamping. The apparatus consists of a frame; an embossing block on the face of which the material is pressed down; a knife "having a rapid vibratory movement given to it in a horizontal direction by means of a crank;" a groove in the side of the frame to keep the knife steady; and a plate placed immediately in front of the knife and lying flat on the material to be operated on. The block travels under the knife by means of a screw shaft; but the knife may be arranged to travel over the block. A roller may be used instead of a block, "and a rotary circular" or a spiral cutter for the knife. Laths of Venetian blinds are made of corrugated strips of metal, perforated or not. India-rubber is employed to form the ladders in which they are mounted and for "connecting the side tapes." Transparent blinds are produced "having one general ground colour and the devices formed thereon in white, which may be afterwards colored." Fabrics are embossed "in imitation of silk serge." A new fabric resembling silk serge is manufactured of a mixture of cotton and silk; both are employed for blinds, stock and hat linings. Blind frames and sashes are prevented from rattling by placing on their edges or in the grooves of the beads bands of rubber or felt secured by strips of metal or wood. Screens for covering pits and frames for greenhouses are made of paper and cloth united and waterproofed. Waterproof silk, muslin, or linen blinds are inserted into the sides and roofing of canvas tents, &c. as a substitute for windows. "What is termed illuminated gilding" on "pervious materials" is produced by

applying the gilt ornament on one side, and the staining materials on the other. "The true Chinese or Indian style" is imitated. Outside blinds are made of leather coated with rubber solution and oil paint; and blinds for keeping out frost from greenhouses by mounting sheets of water and air proof fabric in frames. Glass drops and other glass ornaments are employed in valances and fringes. Blinds and shutters are perforated "in a direction lateral to the surface," so as to exclude rain. Flexible blinds are made on the same principle. Blinds and curtains are attached to windows by spring clips. Some of the processes of manufacture are described in the Specification.

[Printed, 1s. 1 Drawing.]

A.D. 1343, July 13.—N° 9834.

SCULTHORPE, GEORGE KING.—"An improved method of fastening and securing bedsteads." A nut is fitted into each side rail, and a screw is let into the nut. A small hole is drilled in the post to fit the screw, and, when the ends of the rails are thrust into the mortises, the screw points pass through the holes and are secured to other nuts. Webbing nailed to the rails is substituted for laths and sacking. All four rails are circular; two, one end and one side, have square tenons; the other two circular tenons. There is "a hole in the centre of these two circular-ended rails sufficiently deep to give good purchase to a small lever: and to strengthen the wood it is lined with a metal ring." To prevent the circular rails from revolving backwards, each is provided on one end with a metal collar punched with holes "as close as the metal will bear," to receive a small pawl or drop placed either above or beneath the rail.

[Printed, 4d. No Drawings.]

A.D. 1843, August 17.—N° 9870.

CHARLTON, JOHN.—"Improvements in castors for furniture." The patentee claims the invention of four sorts of castors, each admitting of modifications. In the first the socket is of malleable cast iron, conical in shape and strengthened at top by a "prominent border" which is covered with a thin hoop of brass. The heads of the screws which fasten the socket to the article of furniture are "countersunk into the thickness of the metal." The moveable part is a cup of cast brass or other

suitable metal "applied around the exterior circumference of the "socket;" the horns are cast in the same piece of metal as the cup. The lower end of the socket "is a bottom like a cup with a "central prominence," which fits into and passes down through an opening at the lower part of the brass cup. A round, flat-headed screw (the head being larger in diameter than the opening in the cup) is screwed upwards into a hole in the middle of the prominence so as to retain the cup in place. A flat metal washer may be interposed between the head of the screw and the lower end of the cup; in this case the prominence must project further downwards "with a square or other shape," so that the washer may be fitted to it. The modification consists in making the socket and cup each resembling "one half of an egg." In the second the socket is of cast brass, and has a solid iron cone firmly fixed to the lower end of it by means of a central part of the iron that passes up the flat bottom of the socket and is rivetted withinside. The cup of the moveable part is applied upon the solid cone "nearly in the same manner as already "explained respecting the hollow cone." Round the solid cone "near where it joins to the bottom of the brass socket" is a prominent part with which the upper part of the cup comes in contact. The modifications consist in the shape of the iron cone, a corresponding change in the shape of the cup, and in the screw being "screwed fast into the lower end of the solid cone" with or without a washer; also in substituting a plate and projection cast thereon for a socket. In the third the socket is cast in brass or other suitable metal, and has a hollow cone "of the same piece of "metal with the socket" rising up from the bottom into the middle of its interior; the pointed upper portion of a spindle enters the cone, while the lower portion is enclosed by the moveable part, which is made fast by rivetting the bottom of the spindle. A concave disc "is firmly united to the lower end of the "socket," so as to be "like one piece therewith." A collar or round hole in the centre of the disc fits round the middle portion of the spindle. Immediately above the collar the spindle is formed with "an enlargement," which "being included in the concavity of the disc," prevents the spindle from falling but allows it to turn round freely. The hole in the disc may be larger than that portion of the spindle which is within it, so that it will not aid in "sustaining part of the lateral action of the castor," but will merely keep the spindle and moveable part in place. The modi-

fications of the third sort are many; they are divided into two sets and are fully described; one set has reference either to a variation in the construction of the cone or to the shape of the enlargement on the spindle and the consequent change of shape of the disc. In the other set the spindle is fixed; what was the bottom of the spindle in the former set is now the top, and is rivetted within the bottom of the socket; the collar, enlargement, and disc are reversed, and the moveable part encloses the pointed portion of the spindle and is kept on by having its upper rim turned over the edge of the disc. One castor in each set has "three or four small antifriction rollers or trucks applied around the circumference of the enlargement." In the fourth the top of the spindle is rivetted within the bottom of the socket, and the shoulder near the top is "fitted into a circular recess" in the bottom of the socket. For additional security "the metal around the circumference of the said circular recess may be rubbed in over the large part of the inverted cone at the upper part of the spindle." The cone forming the lower portion of the spindle is fitted at its lower end and point into "a corresponding conical hole in a plug of hardened steel," which is driven down into the hollow of the moveable part; the upper portion of the hollow is enlarged "with a conical mouth fitted to the said cone," and the moveable part is held in place on the spindle by a circular flange on it "being lodged within and surrounded by" a circular rim which is part of the metal of the socket. Modifications:—The spindle "may be of a stronger form and with an obtuse blunt point at its lower end" which is fitted into a hollow within the moveable part. For the socket a flat plate may be substituted "having a circular rim projecting downwards from its under surface," similar to the socket rim and for the same purpose. Instead of turning in the rim, screws may be inserted laterally through it or through ears projecting downwards therefrom. Or screws may be inserted perpendicularly so that part of the circumference of their flat heads may come beneath the under side of the flange. Or the moveable part may be held on the spindle by "rubbing down and gathering in the metal" at the top "so as to close the same around the spindle" above its enlargement and beneath the portion which is fixed into the socket, thereby contracting the mouth of the moveable part and dispensing with the rim on the socket. In the Specification (twenty pages long and containing a description of upwards of

twenty castors), the points of contact and bearing in the parts of the castors and a process of hardening and tempering the spindle are explained.

[Printed, 1s. 6d. Drawings. See Repertory of Arts, vol. 2 (*enlarged series*), p. 191; Engineers' and Architects' Journal, vol. 7, p. 114.]

A.D. 1844, February 21.—No 10,066.

HOWELLS, HENRY CHARLES.—(*A communication.*)—"Improvements in the fastenings of bedsteads and other frames." A plate with an opening through it is fixed to each post; on the back of the plate are "two inclined surfaces," the inclines being reversed on the opposite post. A cylindrical bolt enters a hole in the end of each rail, being fastened thereto by a wedge-shaped pin and two projections. The bolt passes through the opening, and two other projections thereon having inclined sides come against the inclines on the back of the plate. "By turning the rail partly round the two posts will be drawn tightly against the ends of the rail." The plate may be fastened to the rail and the bolt to the post. There may be only one projection and one incline at each end, or three at each end, or one projection on the bolt, and "a double incline at the back of the plate" on one side of post and rail, and two projections and two double inclines on the opposite side. In this arrangement the stems of the bolts are provided with projections and plates for screwing or nailing to the rails. In another modification the bolt has one projection shorter than the other; on the plate are double inclines, and two additional inclines so arranged that the lowest part of each of the latter "comes towards the highest point of the double incline." Another method of fastening is by fixing on one end of the rail a right-handed screw, and on the other a left-handed one, which take into corresponding nuts in the posts. In another method the bolt "simply glides without turning" into the plate, the projections on the bolt and at the back of the plate having corresponding inclined surfaces.

[Printed, 1s. 8d. Drawings.]

A.D. 1844, April 24.—No. 10,155.

TAYLOR, WILLIAM.—"Improvements in the manufacture of axle pulleys, and in pegs or pins for hanging hats or other garments thereon." The first part of this invention does not

belong to the present series nor has it anything in common with the second part, "which relates to the covering iron pins or "pegs (suitable for hanging hats and other garments thereon) "with sheet brass." The pin may be plain or ornamental, or "an ornamented cover may be placed on a plain hat pin." The pattern shape being stamped suitably for covering the front, "the "edges of the metal are to be cut away, leaving sufficient to cover "the back of the pin; the metal is then drawn through a suitable "die or tool, as is well understood, by which the edges will be "raised; when the brass cover is to be placed over a hat pin or "peg and placed in a hollow tool, when a hollow punch descends "and bends the edges over the back."

[Printed, 1s. 6d. Drawings.]

A.D. 1844, September 27.—N° 10,332.

RAMUZ, ALEXANDER.—(*A communication*).—"Improvements "in sofas, wardrobes, ottomans, bedsteads, and other apparatus "for reclining or sleeping on, and in the construction of dining "and billiard tables." One part of the invention is detailed in the description of an ottoman, composed of a quadrangular box and a stuffed cover hinged thereto. The head and foot boards move on axes and "may be said to form two crank levers, and it "is this peculiarity which constitutes the novel feature of this "part of the invention." The two side plates of the head and foot boards are framed together by woodwork; they project beyond their axes, the projections being combined by a bar "which is "turned at right angles at both ends." On these bars the lower mattress rests. Another bar is fixed across the lower part of the frame to help to support the mattress when the ottoman is closed. On the back side plates blocks of wood are hinged which "rest on the back top rail of the frame;" the front side plates are supported by blocks which are hinged to recesses on the interior of the frame and which when brought outward form brackets. In constructing a sofa or wardrobe a quadrangular frame, containing the above apparatus, is made to draw out as a bottom drawer; a flap is added at both sides of the frame; these "turn "up to hide the mattress when the head and foot boards are "raised." Sometimes a frame is made "suitable for running "under another bedstead, so as to be out of the way when not "required for use." Another part consists in so constructing

billiard tables that they may be raised or lowered and converted into dining tables. The legs allow racks which carry the frame to move up and down by means of pinions, &c. The frame when raised rests on supports which fold into recesses; at each end is a flap which when in use is kept up by slide bolts.

[Printed, 1s. 6d. Drawings.]

A.D. 1844, September 27.—N° 10,335.

QUINCEY, JOHN HARCOURT.—“Improvements in the manufacture of blinds and shutters.” This invention relates, 1, to the construction of roller metallic blinds and shutters; 2, to apparatus for opening and closing folding shutters; 3, to a mode of constructing sliding metal shutters; 4, to the construction of perforated blinds. 1. The blind is made of a series of bent strips of metal, “the narrowest strips being at the upper part;” they are hinged together by means of bent plates which embrace axes rivetted at each end to the strips; sometimes the ends of the axes are bent, “and then flattened so as to be shut between the folded surfaces of the plates.” The ends of the strips are rounded to prevent “their tendency to catch one against another,” and the strips overlap so as to make the blind close when down. Friction rollers at the end of the lower bar work in grooves fixed on each side of the window; the grooves are made by preference “of two angle irons and a flat plate,” or of two angle irons only. On each end of each strip is a neck, which with pin joints connects the links of a chain, “by which the weight of the shutter is to a considerable extent removed from the hinge joints.” The blind is wound round a roller carrying a pulley at one end; below is an axis carrying another pulley; motion is communicated to the upper pulley by means of an endless strap or chain, which is set in motion by turning the handle of a screw taking into a screw wheel on the axis. There are guide rollers to guide the blind in winding or unwinding. The blinds can be arranged to move in other directions, and, if it be desired to obtain light through them, several or the whole of the strips can be perforated with numerous small holes. 2. The shutter turns on an upper and lower axis; on the latter is a screw wheel moved by a screw, the end of whose axis is square for the reception of a key; a shutter thus mounted can be opened or closed “from the inside, without the necessity of opening the window.” 3. These shutters may

be made of any number of parts which are raised and lowered between guides. On the upper part is formed or fixed a bar to which are secured the ends of a chain, cord, or other flexible means for raising the part. The chain, &c. winds on drums at each end of an axis, to which motion is given by means of a worm wheel gearing into a toothed wheel on the axis. In the upper part are slots to admit projections from the second part, and there are similar slots in the second and fourth parts to admit projections on the third part. To prevent the parts of the shutters being raised too high, there are projecting edges "which slide against the inner edges of the guides;" this contrivance the patentee claims as "the peculiarity of this part" of his invention. Light is admitted by more or less perforating one of the parts. 4. These blinds are made "with corrugated or undulated surfaces," and by preference of a number of narrow laths or strips of perforated metal, bent and placed in frames so that they come edge to edge.

[Printed, 3s. 8d. Drawings. See Engineers' and Architects' Journal, vol. 8, p. 160.]

A.D. 1844, October 10.—N° 10344.

CHABERT, JOSEPH EUGENE.—"Improvements in preparing materials to be used in making picture and other frames, and for architectural and other purposes." The materials are glue (made by preference from rabbits' skins), gelatine, oxide of lead, Spanish white, sawdust, and sulphate of lime. The proportions preferred are, for every thirty-six parts, twelve of glue, one of gelatine, four of oxide of lead, eight of Spanish white, one of sawdust, and ten of sulphate of lime. The mode of preparation is as follows:—"The glue is first to be melted in a suitable vessel, the oxide of lead is put into another vessel, and the glue in a melted state is then mixed with it; the Spanish white and sawdust are then to be added, and the whole well mixed together." If the composition is to be of any peculiar colour, the coloring matter is to be added now before the introduction of the sulphate of lime; the whole is to be "well stirred up together." When the mould has been rubbed over with oil or other suitable substance, the composition is poured in, and when it is full, "the upper part of the framing of the mould is to be put on so as to insure that all parts of the mould shall be fitted." In about

five minutes the cast may be turned out, and when dry, it will be in a fit state to be finished off.

[Printed, 42. No Drawings. See Repertory of Arts, vol. 6 (*enlarged series*) p. 189; London Journal (*Newton's*), vol. 26 (*conjoined series*), p. 323 Engineers' and Architects' Journal, vol. 8, p. 160.]

A.D. 1844, October 22.—No 10,361.

OSMOND, GEORGE.—“Improvements in fastenings for doors, drawers, window sashes, and dining tables, and in apparatus for suspending looking-glasses and other articles.” The patentee describes six inventions, and modifications of some of them. 1. “A sliding bolt to be used for fastening doors and window sashes.” The bolt, which is borne on a plate and moved by a handle, carries a neb or projection; it is “embraced” by three or other number of straps, through each of which is an opening for the passage of the neb. The openings are so placed that the neb cannot pass through a second without a partial turn of the bolt. Deep grooves in the straps will answer the purpose of openings; and the straps, instead of being on the bolt plate, may be made in the socket into which the bolt is shot; or grooves may be cut in the socket. For additional security a stop may be used, which in the passage of the neb “is raised upwards.” 2. “Apparatus for retaining one of two folding doors when the other is shut.” An axis turns in bearings in a frame. On one end is a projection which is caused by a spring to have at all times “a tendency to stand upright;” on the other end is a projection which rises up when the other is depressed. The second projection “moves into a recess formed in the under part” of one door, which cannot be opened so long as the other door is shut, and thereby keeps down the first projection. 3. “A mode of constructing keys for locks of doors and drawers.” The key is hollow and has a stud projecting into the pipe. The stud enters a groove, straight or inclined, on the pin; this too carries a projection “in which may be formed slits and other devices to work on wards or act on tumblers.” 4. “Which relates to fastenings for dining tables.” On one flap is fixed a plate, through which there is an opening to allow of the passage of a bolt and neb thereon. On another flap is a plate carrying the bolt, which is furnished besides with a handle and with a screw at its back end. The neb can enter the opening only when the handle is in one position. Turning the handle

will cause the screw to screw into a nut and draw the flaps together. "Another arrangement of apparatus" consists, (1), of plates affixed to one flap with bearings for receiving screws in such manner that they "can turn freely without otherwise "moving" from their position. There is one plate and screw "near each side of the table," and each screw is square at the end for a key; (2), of plates under other flaps "having fixed "projections with female screws formed through to receive the "screws;" by this arrangement and by "connecting plates" the flaps are drawn tightly together. 5. "Fastenings for window "sashes." The upper sash is provided with a hinged plate having a projection or hasp on the under side thereof, "the "hinged plate being so hinged as not to be allowed to go too "far back." The hasp "passes into an opening formed in the "upper part of the other part of the apparatus" (which is fixed on the lower sash), and in so doing receives a sliding bolt which holds the hinged plate securely. Another arrangement:—A socket fixed on the upper sash receives the head of a sliding bolt carried by the lower sash. When the bolt is forced into the socket a stop, acted on by a spring, descends into a groove in the bolt head. A coiled spring on the bolt "causes the bolt to be drawn "on tightly." When the stop is raised the spring draws back the bolt. A third arrangement:—The sliding bolt (carrying a neb near the front) is made in two parts, the handle part being set at right angles to the other, and the adjoining surfaces being inclined to each other. When the bolt head and neb are passed through the socket, a half turn of the handle will retain the parts securely together, "the neb being drawn tightly against the front "plate of the socket by the inclined surfaces." A slot in the strap which embraces the bolt receives the neb when the bolt is drawn back. 6. "Apparatus for suspending looking-glasses and "other articles, and articles where rollers are used." To suspend a swing glass there is employed on each side a plate having at its back a hollow cone to receive a conical axis with a cylindrical stem, on the end of which is fixed a collar. "A coiled or it "may be other spring" tends "to draw the conical axis into the "hollow cone, and by the two conical surfaces being thus drawn "together a quantity of friction is produced which will retain a "swing looking-glass in the position desired." Another plate, with an opening and slot in it, receives the end of the axis and holds it securely "by the nicks" cut therein. Sometimes the

spring is dispensed with, and a nut, screwed close upon a washer, is used "with capability of adjustment;" or the last-named plate may have "a dovetail projecting recess to receive the dovetail head of the conical axis," and the screw nut is retained by a screw "passed through from the front of the apparatus" to keep the cones in tight contact. Another arrangement:—The axis is cylindrical, and has formed round it a groove which is embraced by a strap, "the end of the strap being drawn tight on the axis by a screw nut." Instead of using a strap "a screw may be passed through the bearing, and by pressing on the axis give the requisite friction." To suspend a roller blind or map "the axis of the right-hand socket" has affixed to it a disc the upper portion of which enters a curved groove formed in a plate. In the plate is an oblong opening through which passes a tube "having a square hole through it to receive the square axis of the roller." A spring provided with an adjusting screw constantly presses up the tube, "by which the disc is pressed closely into the curved groove, and thus is friction produced which retains the roller in any position it may be left;" or the disc may be affixed to the tube. Another arrangement:—A square axis enters a square recess in one end of the roller. On the axis is formed a cone which enters a hollow cone carrying a ratchet wheel. The wheel is prevented from turning in one direction by a click. A spring draws the conical part into the cone, and thus "there will be a constant friction offered against the weight of the blind or map." A third arrangement:—A ratchet wheel is fixed on the square axis. The click is raised by means of a cord acting on a lever, and so long as the cord is pulled the blind or map can be drawn down, but it will be stopped as soon as the cord is let go.

[Printed, 2s. Drawings.]

A.D. 1844, November 2.—N^o 10,373.

NEWMAN, WILLIAM.—"A certain improvement or certain improvements in window blinds." The roller of a spring blind is placed at the bottom of the window frame, the axis fitting in square bearings so as to be incapable of rotating. Two cords are attached one to each end of "the blind stick;" the left cord passes over two pulleys placed at the upper part of the window frame, the right cord over one only. One cord may be arranged

to answer the purpose. Pins or knobs are fixed on the window frame for the reception of loops formed on the cord. "By inverting the blind," and "the mechanism thereto belonging," the blind "becomes a descending blind." To fix the blind in the blind stick a metal tube is employed slotted from end to end; the blind is fastened to a wire having a moveable knob at one end, and a fixed one at the other; it is then introduced into the tube. The roller is detached by means of a spring catch composed of a lever, spring, and brass plate, screwed to the side of the window frame. One end of the lever enters a recess in the plate; the spring attached to the under side of the lever bears against the plate and presses the lever upwards; the shoulder of the lever bears against a projection on the plate, and in the lever is a rectangular hole for the admission of the end of the roller axis.

[Printed, &c. Drawing.]

A.D. 1845, January 11.—N^o 10,456.

GOLLOP, JOHN.—"Improvements in spring hinges, in spring roller blinds, and in applying springs to easy chairs and carriages." The peculiarity of the hinge is the use of a flat coiled spring on the axis: the joints turn on a tube enclosing the springs. The top of the upmost knuckle has a notched edge whereon is placed a cap with a similar edge: inside the cap is a pin, against which one end of the spring rests, the other end being fastened to a stop on a bar whose ends enter notches formed at the bottom of the lowest knuckle. The whole is combined by rivetting the ends of the axis. Modifications:—1. Only one of the hinge flaps may be fixed, the other "sliding with a friction wheel, so as to push the door to close it." 2. Springs of flat steel bars may be so applied "as to act by torsion;" the ends are received into recesses in the caps, and the knuckles are made concave and convex to each other. 3. The axis is pinned in the upper knuckles, the springs are coiled round the axis, one end being fastened thereto, the other to "the barrel or lower part of the knuckle joint." 4. The axis is fixed in the upper part of the hinge; the lower part of the axis has coiled round it a spring or springs tightened by a nut on the bottom of the axis; part of one knuckle has inclined surfaces thereon which rise and fall in corresponding surfaces on the knuckle below; the spring may be

a flat bar. "Springs to hinges for folding doors:"—the mechanism consists of, 1, a shoe and a case which contains an axis with a circular disc round it provided with a recess to receive a friction roller constantly borne towards it by a spring; 2, round the axis a coiled spring enclosed in a barrel; 3, a sort of cap moving on the axis; 4, ratchet teeth in "the end and cover of the end of the barrel;" and, 5, projections for the parts requiring them. For roller blinds the cord is joined at its ends by means of a coiled spring. In easy chairs the back is hinged to the back rail of the seat by one of the above spring hinges. The arms, to which a "carriage is to be slung," are attached to the following apparatus:—A barrel (fixed to the axletree) contains two sets of springs coiled different ways; caps turn freely in sockets formed at the ends of the barrel; the springs rest on projections in the barrel and caps; and the arms are fastened to the caps.

[Printed, 1s. 2d. Drawings. See Repertory of Arts, vol. 6 (*enlarged series*), p. 153.]

A.D. 1845, January 11.—N° 10,460.

PERRY, STEPHEN. — "Improvements in the application of "springs to locks and other fastenings, to paper holders, to "candle lamps, to blinds, window sashes, and doors, and to seats "and elastic surfaces for sitting and reclining upon." The springs are made of vulcanized india-rubber. In applying them to locks one end is fastened to the lock plate or to a pin fixed therein, the other end "to the upper part of the back end of the "spring bolt" or to a pin on the bolt; in latch bolts one end is secured to a pin on the plate, the other to a pin on the latch. In portfolios a series of thin springs are attached to the top and bottom of the backs, "so that a series of folded sheets of paper may be "placed under each." In paper holders one strap is fixed across from side to side; another is fixed at the top and is provided with a bent catch at its lower end. In candle lamps one end of a spring is fixed at the top of the lamp, and the other to the cylinder after passing under a pulley. In roller blinds the spring is so placed that it "tends at all times to drawn down the pulley," over which the endless cord works; sometimes the endless band is made of india-rubber, sometimes partly of india-rubber and partly of the ordinary cord. In window sashes the springs "are "affixed to the sashes and to the frames in which the sashes "slide," in place of the cords and weights heretofore used; in

sheet is placed with the pasted side undermost upon a sheet of linen or other fabric "which has been stretched in a frame, while "in a wet or damp state, and the two surfaces are carefully "pressed together and combined by wiping and rubbing them "with a damp sponge." Finally the united sheets are passed between rollers. If the perforated sheet is to be of some woven fabric, it is prepared for perforation by stretching it in a frame, coating it with size, gum, or other adhesive substance, and (when dry) attaching it "by the ends to a sheet of paper;" both the sheets "are then passed through the apparatus for punching the "device." The second relates to opaque fabrics:—A like process is followed, and like materials are employed, except that "the "opaque sheets are of either a thicker or darker sort," and of such colours as "will contrast strongly," namely, "black with "white, or red with green." The third is a method of rendering the double fabrics impervious to wet:—A layer of caoutchouc is interposed between the sheets; it is "applied either in the state "of solution or in the state of a soft pulp." The fourth refers to "dwarf window blinds:—"Two or more sheets of paper are used; the surface of one or both is covered with paste; a sheet of cotton, linen, or other fabric (previously dipped into or coated with size or some other stiffening solution) is placed between them, and the whole is combined by pressure. When dry it is "perforated in "patterns through and through," and afterwards painted, varnished, and glazed by means of rollers, "so as to produce a close "imitation in appearance of metallic blinds."

[Printed, 4d. No Drawings. See London Journal (*Newton's*), vol. 29 (*continued series*), p. 33.]

A.D. 1845, May 6.—N^o 10,656.

HILL, JOSEPH.—"Improvements in manufacturing wire fabrics "for blinds and other uses." The first improvement consists in "so operating on woven wire fabrics as to produce them in a "corrugated form." This is accomplished by passing them "between grooved iron rollers." The corrugations are usually "from half an inch to three-eighths of an inch," and are found "to "give the desired stiffness for the purposes of making blinds." The second is producing ornamental patterns on woven wire fabrics. This is effected by aid of a "die of brass or other suitable "material having the ornamental pattern formed thereon in relief,

"preferring that no part thereof shall be capable of producing greater relief than to the extent of one-eighth of an inch." Over the die is spread a sheet (about a quarter of an inch thick) of vulcanized india-rubber, and then the wire fabric is "to be pressed on to the convex die" by means of a powerful screw press. "There is great advantage," says the patentee, "in thus using vulcanized india-rubber, as it saves the making of a counter die."

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 6 (*enlarged series*), p. 358; London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 350; Engineers' and Architects' Journal, vol. 9, p. 16.]

A.D. 1845, June 3.—N° 10,701.

AITKEN, WILLIAM COSTEN.—"A certain improvement or certain improvements in ornamenting cornice ends for cornice poles and other rods, curtain bands, and certain other articles." This invention consists in the application of "plain or colored glass, porcelain, vitreous and semi-vitreous substances" to the ornamenting of the articles named in the title; parts of the articles are made of one of the above materials and other parts of metal. Bed-posts, head and foot rails, legs and other parts of chairs and couches are included in "certain other articles." In making curtain holders metal is sometimes introduced into the whole of the interior for the purpose of strengthening the more fragile parts.

[Printed, 1s. Drawings. See London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 398.]

A.D. 1845, October 16.—N° 10,884.

BARSHAM, JOHN. — "Improvements in the manufacture of mattresses, cushions, brushes and brooms, and in machinery for preparing certain materials applicable to such purposes." The machinery, whereby the patentee weaves "tufts of cocoa-nut fibre, or of hair, or other material sufficiently stiff to stand on end," and so to give elasticity as a stuffing for mattresses, &c. is composed of a frame, a batten working on an axis which can be moved as the length of the fabric increases, a reed, a board "which is introduced when the shed in the warp has been opened," the warp wound on to a roller, and the harness moved by means of a lever and cords. The weaving is described, and the woven fabric is bound together and enclosed in a suitable

case. To weave fibrous matter for brushes and brooms "a spaced warp" is placed in the loom, "and the warp threads are so arranged in respect to the harness or heddles that half will go up and half down at each time of opening the shed," and at each time of opening the cords of fibre are introduced as weft. The fabric is cut at proper distances, and the ends of the cords on each side are carded, or the carding may be done after making up the article. Another mode of making a fabric to be converted into brushes:—Two cords, each consisting of four strands, are folded to and fro in a frame composed of two bars combined with screws; one bar is held in a vice. The workman, having made one end of each cord fast, passes the cords between the bars; then he introduces a pin; he again passes the cords between the bars, and then puts in another pin, and so on. By means of "a filling piece" the folds are driven close together, and the bars are then screwed up more tightly. The pins are drawn out, and the whole is fastened by needles and waxed yarn into a flat fabric; this can be made into two brushes by nailing it on to two handles or backs and cutting it down the middle. To keep the fabric more closely together and prevent its opening while fastening to the handles "a strap connected to two pieces of metal in the form of hooks" is placed on it. Another mode of making brushes consists in twisting the fibre into a proper cord, and then "cutting off short lengths and bending them to introduce them into grooves or channels" by the aid of a forked instrument. Another brush is made of "the husk of the cocoa-nut without having first converted it into fibres." The husk is cut up into "dovetail forms," and handles with suitable grooves are filled therewith.

[Printed, 2s. 6d. Drawings.]

A.D. 1845, November 4.—No 10,918.

MINTER, GEORGE, and BADGER, JONATHAN. — "Improvements in the construction of easy chairs." The back is suspended on axes which have bearings in plates on the side framings. Two plates are fixed to the lower part of the back, each having a hole in its side through which the axes pass. Two other plates at the back end of the seat, at the sides thereof, have eyes through which the axes also pass. The axes project beyond their bearings so as to receive quadrant frames and allow them to move thereon. The quadrants are screwed to a side frame con-

sisting of two side and two cross rails. To the seat is hinged a leg rest, and to this a foot rest. At the front ends of the side rails are hinged two projections which press against the back of the leg rest. On the front of the quadrant, at the right hand of the chair, is a rack into which gears a screw on an axis furnished with a handle. The front of the seat rests on two pins "when down at its lowest position." The back may be "capable of separate adjustment" by aid of the following:—On the back and front rails of the side frame are guide rails between which a crosshead moves; in this is a female screw for the passage of a screw, "the back end of the axis" of which turns in a bearing in the back rail. To the crosshead are hinged two diagonal supports whose upper ends are hinged to the chair back. If the screw, &c. be dispensed with, the supports will be applied to the side frame.

[Printed, 1s. 2d. Drawings.]

A.D. 1846, January 12.—N^o 11,031.

CHINNOCK, CHARLES.—"Improvements in the construction " and methods of extending and compressing articles of furniture " and domestic use, also applicable to cutlery, workmen's tools, " window blinds, shutters, and similar useful purposes." 1. The construction of music stools, the height of which is regulated by a spiral spring in the hollow of the inner pillar:—One side of the upper part of the inner pillar is pierced with holes; in the outer pillar is a plug which enters the spring; one side of the outer pillar is moveable; in this side (or it may be in the other part) is a lever with a pin formed on it; a rod connects the lever to a pedal at the bottom of the stool; or the spring may be placed in the cavity of the outer pillar, the lower portion of the inner pillar (which is round) entering the spring, while the upper portion, which is square, rests on the top of it; the square part is pierced with holes, and the height is adjusted by a pedal, rod, chain, pulley, spring, and bolt. Similar mechanism is applicable to music stands, fire-screens, and bed-tables. 2. Water-closets:—A pedal is employed instead of the ordinary handle; it may be on either side; a bar passes through the heel and through a hole in the floor; round the bar below the heel is a spiral spring; a weight applied at the back end of the bar answers the purpose of the spring; the machinery of the closet is placed behind and at one

end. 3. Ball and socket joints :—A ball having a slot in it is fixed on a plate; in the slot is placed a pin tapped at the outer end; the socket in which the ball works is flanged; a spiral spring is placed round the pin after the socket is put on, and a nut or thumbscrew on the top of the pin secures the spring. Two ball and socket joints with only one spring may be combined by means of tubes. "The up-and-down or a horizontal motion" may be obtained by a knuckle joint and a spiral spring controlled by a thumbscrew. To obtain "a perpendicular, horizontal, and circular motion" in one article, a cup or hollow is formed in the ball, and the nut must be rivetted to the pin. Or a tube is employed having on the inside at one end a rim upon which the ball rests; a small cup is dropped into the tube upon the ball; the spring is placed on it, and a nut is screwed to the tube. 4. The construction of articles so that they may be raised or lowered is similar to that of music stools; the outer pillar is slotted; to the sides of the slot is fitted a rack, and a catch is screwed through the slot into a hole at the lower end of the inner pillar; instead of the rack and catch, a strip of rubber may be fastened, one end to the inside of the outer, and the other to the side of the inner pillar. 5. A reclining chair is adjusted to the person using it by the weight of the body acting upon two spiral springs which work on rods in the bottom framework; upon two pins on the framework of the back working in slots in the framework of the back rails; and upon rollers on the front rail on which the seat moves. A chair especially intended for invalids and surgical purposes has in addition a moveable hinged part in the framework of the back, and a hinged or knuckle-jointed back stopped by a bolt or by a toothed arc and screw. "The pads on the arms, by turning on "hinges, may be made to form small tables." 6. A new construction of mangle :—A slab of wood passes between five fixed revolving rollers and two large wooden or hollow metal rollers which move along the bed; this rests on spiral springs whose force is regulated by nuts and screws working through rails into plates at the bottom of the bed. 7. A new method of hanging curtains :—A slotted tube has a pulley at each end and a rod inside; two blocks move freely on the rod, the one on the left having a hole bored through it and a pin which works through the slot; the cord, having been fastened to a hook on this block, is passed over the left pulley; a spiral spring is applied over rod and cord; the cord is passed through the hole in the left block,

"knotted as near as possible the whole length of the tube" and run through the right block which is then slid on to the rod; another spring is placed over cord and rod; the cord now passes over the right pulley and hangs down at the side. The springs may be placed outside the tube and the curtain rings on the rod.

8. A method of adjusting the height of a picture frame:—A pulley is attached to a brass rod fixed round the room on brackets; over the pulley passes a cord provided with two hooks; the cord in descending passes through a piece of wood or metal concealed by an ornamental tassel.

9. A new construction of window frame for carriages:—A spiral spring is inserted into a tube formed in the framework of the door; to the sash frame is fastened a plug "on a moveable centre at the top;" a catch (with a tassel appended) is fixed through the plug to a slot, at the sides of which a rack is formed; a strip of rubber may be used instead of the spring.

10. In window frames for houses spiral springs on rods are substituted for weights and cords; blocks with holes for the passage of the rods are hinged to the top of the sides of both sashes which are secured by racks and catches; the lower sash is hinged at the sides. If springs are used on one side only, modifications (described in the Specification) of these arrangements are required; rubber may be used as springs.

11. Easels are composed of a base, two pillars, and a reading desk; at the lower end of the base is a contrivance for attaching the easel to any article of furniture; the top of the base and bottom of the hollow pillar form a knuckle joint, and by aid of a screw passing through the base, and a toothed quadrant at the bottom of the pillar, the easel may be fixed at any inclination. The spiral or rubber spring-rack and catch and ball-joint may be combined with parts of the easel. The patentee describes a "much less complete" and cheaper easel than the foregoing one.

12. In the handles of pen-knives is fixed a small tube extending obliquely towards the front of the shoulder of the blade and containing a spiral spring connected with a lever whose point goes into a nick in the shoulder when the knife is open; when closed, the blade is kept fast by a T-shaped bolt connected with a "push piece," which acts upon the lever.

13. Flat irons:—One handle will serve for several irons by making it in two parts; two pieces of wood are turned of a conical shape, one having a plug formed thereon through which a slot is cut, the other being hollowed to receive a spiral spring and the plug; when the parts are joined, a pin is passed through

a hole in the hollowed part into the slot; grooved standards on the irons admit rods attached to the handle ends by metal bands.

14. Compasses and callipers:—The legs of the former are moved and fixed by means of a toothed segment and archimedian screw: at the joint of the latter is a cog wheel acted on by a screw.

15. Razor blades are kept open at any angle by means of holes sunk in the shoulder for the admission of a pin fastened to a lever and spring fixed in an inclined groove on the outside of the handle.

16. Scissors:—In one limb a circular hole is sunk in which is placed a spiral spring or a “four-cornered lever spring;” the hole is smaller at bottom, and the uniting pin, after passing through the hole and through one in the other limb, is rivetted; the pin is squared “at that part of its length which passes through the “larger hole,” and the top end is screwed on to a button.

17. Spring hinges:—The axis is a square pin rounded at the middle and tapped at both ends; it passes through a cylinder cut into three pieces obliquely; the middle piece, “which is wedge-shaped “at each end,” is placed on the round part, “and is fixed to part “of an outer case or barrel having a flap attached thereto;” the other pieces are put on; spiral springs are applied at each end; two end barrels with flaps are “applied over the springs, pin, and “wedges,” and the ends of the pin are screwed to nuts.

18. A drill or boring tool consists of a strong wrought or cast iron tube, having one or more worm slots formed round it and notched at the bottom; a solid rod bored at the lower end “to receive the “shoulder of the tool applied to it,” and having notches “on the “sunk part at the other end;” pins or screws (to prevent the tube and rod from coming apart), which “work through the tube “into the slots;” a spiral spring placed in the tube; and a piston and rod, the former fitting the tube and provided with one or more pins, according to the number of slots in the tube, the latter having a handle or button at the top.

19. Rack pulleys:—The rack has a dovetailed slot running its whole length; the “controlling apparatus” is composed of a plug having a catch formed thereon which fits the rack and slide fitting the dovetail; a slotted tube with a pulley at the lower end; and a spiral spring which with the plug is placed in the tube; the plug is prevented from escaping by a pin which passes through it into the slot, and the tube has a small spring fixed to the under side.

20. Coffee-pots:—These are made with a spiral spring applied to a piston and rod for forcing the water through the cylinder which contains the

coffee. 21. Filterers :—An “inverted conical-shaped” vessel rests by means of its flange on the rim of an outer vessel; the inner vessel is formed of two vessels, one within the other, finely perforated; between the two is placed a bag of suitable material. 22. Colanders :—A wooden screw passes through a cross piece into the sunk hole of a platter formed to fit the inside of the colander whose bottom is hinged on. 23. Saucepan covers have an aperture formed in the middle; therein is fitted a “partially “perforated cover part,” having a flange thereon; this part is attached to a float. The cover may be of the ordinary construction but furnished with a deep flange, the upper part of which is thickly perforated. 24. Chamber and other candlesticks have in their tube a spiral spring whereon is placed a disc provided with a spike on the upper side; two pins “fixed or formed in a groove” support two “lever clips.”

[Printed, 3s. Drawings.]

A.D. 1846, February 25.—N° 11,108.

PEMBERTON, THOMAS, junior.—“A new or improved method, “or new or improved methods, of ornamenting window furniture, and articles of upholstery in general.” The patentee ornaments the fringe used in window furniture and in upholstery with metal or metal combined with glass, china, earthenware, or other vitreous or semi-vitreous materials; the links also are made of metal or metal combined as aforesaid. He sometimes constructs the whole of the fringe of a series of metallic hangers or of metal combined with silk, worsted, or other fibrous substances. The same ornamentation is applicable to “cornice or curtain “poles, cornice ends, pole-rings, and cornice brackets, curtain “pins, or bands of holders, or other articles for supporting “curtains, festoon rings, and bell ropes.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 29 (*continued series*), p. 261; Patent Journal, vol. 1, p. 245.]

A.D. 1846, February 28.—N° 11,115.

FONTAINEMOREAU, PIERRE ARMANDE LE COMTE DE.—(*A communication.*)—“A new mode of manufacturing and glazing cotton wadding and its application to the making of “mattresses.” The principal parts of the machinery required for carrying out this invention are, 1, a basement and “framework

" composed of two rows of uprights connected by cross bars ;" the framework is open excepting the middle compartment, which is " kept warm by steam or hot air," and here too is " a drying " cylinder " with steam or hot air pipes ; 2, two glaze troughs fixed one at each end of the framework ; both are partially filled with gum or starch in a fluid state, and the inner one stands a little higher than the outer one ; 3, a wooden glazing roller in each trough, one axis of each being " prolonged at one end in " order to carry a toothed wheel ;" 4, three endless webs (one above the other) revolving on rollers and pulleys, the rollers being connected by pinions to the toothed wheels ; 5, wooden pressure rollers ; 6, a revolving shaft having " two screws formed on it " one at each end, which take into the teeth of the wheels ;" 7, a series of carding engines, " of which as many are employed as " may be necessary to deliver at once the number of slivers of " cotton wool required to form the sheet of wadding ;" 8, a " collecting endless web " passing round rollers which receive motion " by means of a band carried from the carding engine or " in any other suitable way." The action of the machinery is described in the Specification. In making mattresses as many glazed sheets " are superimposed one upon the other as is necessary to produce the desired thickness," forty sheets of cotton wadding forming a mattress " of a thickness equal to one of wool, " weighing about thirty-three pounds, and of the size of about " one yard three inches in width by five and a half inches in " thickness." The sheets are " wrapped in a coarse cloth and " reduced by means of a lever press to one-fifth of their original " bulk," after which the mattress is finished in the ordinary way.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 45, p. 337.]

A.D. 1846, April 7.—N^o 11,161.

LEWIS, GEORGE.—" Improvements in the construction of shutters and blinds for windows and doors, and in the construction " of doors." The first shutter described consists of a series of sliding rectangular frames formed with vertical grooved stiles or ribs to which the metal panels are screwed or rivetted. Studs, working in the grooves and stopped by horizontal bars, hold the frames together and help to lift them. The shutter slides in guiding grooves in the window frame, from either above or below, by means of the ordinary arrangement of chains, pulleys, barrels,

and rotary shaft. By suitable alterations the shutter may be made to slide horizontally on antifriction rollers. The second, forming either a shutter or blind, is composed of metal rails slightly overlapping at their lower edges and rivetted or otherwise fastened to bands of leather or suitable material. The bands are made double, thin strips of steel or other metal being sewn between. A sliding door may be constructed on the principle of either shutter.

[Printed, 1s. Drawings. See London Journal (*Newton's*), vol. 30 (*continued series*), p. 102.]

A.D. 1846, May 5.—N° 11,194.

RIDDETT, GEORGE.—“Improvements in reading tables.” The stand is hollow, and the pillar which slides in it is fixed at any height by a set screw; the pillar may be attached to any article of furniture without the stand. To the under side of the table top a bar is fixed in such manner that a sliding piece may move thereon (but “tightly”) from end to end. On the slider is a circular disc which is united to the pillar by an axis, and the table is retained in position by a screw. When the top is horizontal, a spring stud, fixed on a lever which is constantly pressed on by a spring, enters a hole in the bar. The ridge on which the book rests is secured by split studs. The top may be constructed so as to be enlarged. When the reader wishes to alter the inclination of his book, he pulls a cord fastened to a stud on the under side of the table top opposite to him.

[Printed, 10d. Drawing. See Repertory of Arts, vol. 8 (*enlarged series*), p. 378; Patent Journal, vol. 2, p. 459.]

A .D. 1846, May 19.—N° 11,212.

PERRY, STEPHEN.—Improvements in the manufacture of rings, “straps, bands and bandages, cords and string, and in their application to clockwork, to locks and other fastenings, to presses, to books, to paperholders, to candle lamps, to window sashes, to doors, to window blinds, to seats and surfaces for lying and reclining upon.” The material employed in the manufacture of these rings, bands, &c. is prepared india-rubber, and they are cut either out of a sheet or from a tube thereof. In the present series the material is applied, 1, to window sashes:—A piece of it is placed between the lower sash and the sill, and another between the upper sash and the upper part of the frame “to prevent the admission of

“wind or rain;” a piece is applied between the upper and lower sashes, and in some cases up the sides of the windows, “to prevent shaking.” 2. To doors:—A piece is attached at one side and the top, and sometimes “all round, between the edge of the door and the door frame and sill” to prevent draft, also noise “arising from shaking,” and when applied to an external door the admission of rain. 3. To raising window sashes:—Endless bands are substituted for cords and weights. 4. To closing doors:—A strap is secured at one end to a projection on the upper part of the door; it “passes into the interior of the lintel over a pulley, and is then at the other end affixed to the door post.” 5. To raising roller blinds:—A spring formed of a band of the rubber is so fixed that it “tends at all times to draw down the pulley over which the endless cords of roller blinds work;” the endless cord may be wholly or partly of india-rubber. 6. Its application to seats:—two portions of webbing are fastened to two rails, and the portions “are connected together by means of a strap or band” of the rubber; “or the whole webbing of the seat may be composed of the prepared india-rubber, and the arrangements may be varied.”

[Printed, 2s. 4d. Drawings.]

A.D. 1846, June 16.—N^o 11,241.

COTTAM, EDWARD.—“Improvements in bedsteads,” namely, in fixing the coiled springs in such a manner that they can be readily unfixed and packed up. The springs “formed in the shape of two cones” are secured in any convenient way between two sets of cross laths; if the lower laths are of metal, their ends are turned down so as to enter holes in the side rails; if of wood, the ends enter recesses therein. Longitudinal straps of leather or woven fabric are drawn through “cut and raised portions” of the upper laths, and buttoned to the frame of the bedstead. Or “metal laths may be drawn through such openings or between the tops of the springs.”

[Printed, 1s. 2d. Drawings. See Patent Journal, vol. 2, p. 512, and vol. 6, p. 223.]

A.D. 1846, June 29.—N^o 11,264.

COULSON, THOMAS LANE.—“Improvements in the construction of chairs,” or rather in the backs of chairs, an upper portion

of which is moveable. This portion consists of two side bars moving on an axis in the back and secured, when not required for use, by pegs; it is divided into two padded and properly weighted parts hung on axes in the side bars.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 9 (*enlarged series*), p. 153; London Journal (*Newton's*), vol. 32 (*conjoined series*), p. 204.]

A.D. 1847, February 8.—N° 11,566.

KENNEDY, WILLIAM SADLER.—“Improvements in attaching “plain or ornamental surfaces of earthenware, china, or glass to “articles made of metal, wood, or other materials.” The patentee attaches “metal connections” to these surfaces in such a manner that they can be fixed to articles of furniture without interfering “with the appearance of the front of the plate.” In moulding or otherwise forming the ornament a hole (or a number of holes) is made in the back; the inner end of the hole is enlarged, and there are “other openings” down to the enlargement; the metal connection has projecting parts corresponding with the openings; and the whole is passed down until the connection is at the bottom of the hole. It is then turned round “a quarter of a “circle in the enlarged part,” and the vacant portions are filled up with any suitable hard cement. The methods of fixing to any article of furniture, hat peg, curtain pin, &c. are various; the metal connection may have in it a hole with a female screw; it may have a stem to receive a nut, or a screw, or a pointed pin. If the ornament is of glass, the hole is made large enough to receive a socket; in this may be “a square hole to receive a “spindle;” or it “may project and have a male screw formed “through it;” or it “may have a female screw formed in it.” Another method is to form the ornament “with an under-cut “opening” to receive a stem “which is split at one end;” a “wedged piece” being previously placed in the opening, the split portion “will be opened out, and by coming under the “under-cut part of the opening will hold the ornament or “knob.”

[Printed, 10d. Drawing. See Patent Journal, vol. 3, p. 290.]

A.D. 1847, February 8.—N° 11,568.

LOACH, JOHN.—“A certain improved fastening or certain improved fastenings for windows, shutters, doors, and tables,

" applicable also as a fastening or fastenings generally." On a metal plate, fixed to the lower sash of a window, or to one leaf of a table, is an axis whereon a lever is mounted "moving in a horizontal plane." One end of the lever is formed into a thumb plate, the other end is curved; "the curvature of the concave side of the same is excentric to the axis;" and the upper surface of the curved end is inclined. One end of a steel spring presses against the lever, the other end being fixed to the plate. On a metal plate fixed to the upper sash or to an adjoining leaf is a box, "the under surface of which is inclined," containing a roller "which works on an axis on the plate." By aid of this fastening the sashes "are, firstly, raised or lowered to the proper height; secondly, drawn closely together; and, thirdly, pressed against the window frame so as to prevent the shaking of the said sashes." The spring may be replaced by a lever which is made to press upon the other by a coiled spring contained in a box; a roller is placed on the pressing end, whereby the friction of the one lever on the other is diminished. When the fastening is intended for a table, it is sometimes modified by substituting a spring click for the spring and by notching the back of the lever.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 31 (*conjoined series*), p. 104; Patent Journal, vol. 3, p. 287.]

A.D. 1847, May 10.—N^o 11,699.

NORMAN, WILLIAM.—"Improvements in the construction of expanding or dining tables." To the cross bars of the frame is secured a tube, on the ends of which are sockets "embracing the tube," one being fixed thereto, the other being capable of adjustment by means of two screw nuts (one on each side of it) on the end of the tube; each socket is provided with a pulley carrying an endless chain. A square-headed screw, turned by a crank handle, passes through a screw nut fixed in the tube. The other parts "of the sliding apparatus" described are not new; the patentee claims only the tube, screw, and mode of adjusting the distance of the pulleys by screw nuts. Modifications:—The tube is squared at one end so as to be turned by a handle or key; at the other end is a nut through which a hollow screw passes; a male screw fixed to the opposite rail of the frame enters the hollow screw. For further expansion there may be two hollow screws between the tube and fixed screw. In round tables "the

"only novelty consists in applying a combination of a screw and tube to give motion to apparatus for expanding and contracting a series of sliders for supporting additional flaps," and in giving simultaneous movement by racks put in motion by a pinion or cog wheel."

[Printed, 2s. 2d. Drawings.]

A.D. 1847, May 18.—N^o 11,705.

PEYTON, RICHARD, HARLOW, JONATHAN, and HORNE, THOMAS.—"Improvements in the manufacture of bedsteads." This invention includes three improvements. 1. Making metal tubes for bedsteads of an ornamental character:—the sheet metal is embossed with any design, annealed, and "drawn through dies" or holes in the ordinary manner." 2. Modes of connecting the laths to the rails:—each end of the lath is slotted and passed over a stud on the rail; or the slots may be in the rails and the studs on the laths. The stud may be secured by "a fastening or slotted plate" placed on it, or by a spring catch. The studs may be fixed on plates attached to the rails. The rails may be made in parts connected by means of slots and screws. 3. Covering bedposts with printed or otherwise ornamented woven or other fabric or leather:—the covers are drawn on and fixed by couplings and rings.

[Printed, 1s. 2d. Drawings.]

A.D. 1847, May 22.—N^o 11,706.

CHINNOCK, CHARLES.—"Improvements in regulating motion and controlling friction in the joints and other parts of furniture, machinery, and carriages." The patentee describes first a reclining couch and chair:—Two rods surrounded by spiral springs extend from end to end of the outer frame; between them is a rod of the same length tapped in the middle; on this rod are a moveable cross piece and a screw nut for regulating the springs. An inner frame, having three holes bored in the upper end for the passage of the rods, is placed in the outer frame. A rail, carrying the framework of the couch head or chair back, is united to escutcheons on the outer frame by pins; it is furnished with rollers by whose action the inner frame is forced forward, the springs are compressed, and inclination is given to the head or back. The back rail or arm of a couch is jointed and connected to the outer frame and end rail by pins. The seat frame is secured

to the outer frame by pins and holes or by hinges. If the chair has arms, each is jointed to the back rail and elbow which is jointed to escutcheons on the front corners. The patentee sometimes applies a stop consisting of an iron rod furnished with two eccentric rollers and a handle; it is passed through holes in the sides of the outer frame and slots in the under side of the inner frame; the seat frame must be fastened to the inner frame.

2. A roller joint for a looking glass:—it is composed of a plate to be fixed at the back of the glass; a slotted roller; a tapped pin in the slot; a socket flanged for fastening to a pillar and having a case for the pin cast on it; a spiral spring placed round the pin; and a thumb nut. The case “is put through a hole formed near the top of the pillar,” and the nut is screwed to the pin.

3. A music stool:—this has been principally described in the Abridgment of Specification 11,031, the only difference being the position of the spring lever, which is here attached to an iron ring applied round the top of the outer pillar.

4. Three combinations of a ball and socket joint:—the first is applicable to tables and is composed of a plate, ball, rod, spring, and socket with case or cap cast on it, as in the roller joint; the rod passes through socket and case and through a hole bored the whole length of the pillar and pedestal; the end is screwed to a handle; the case “is sunk in the under side of the block of the pillar.” The second is applicable to a gun carriage; the ball has a round cup formed in it; at the bottom is hinged a screw pin which passes through the flanged socket; the spring is confined on the rod by a screw nut. The third is applicable to carriage shafts; the ball and socket case are cast with clamps; in other respects the joint is very similar to the others; a band “slides over and conceals the action.”

[Printed, 1s. 4d. Drawings. See Patent Journal, vol. 4, p. 9.]

A.D. 1847, September 16.—N^o 11,869.

HANCOCK, WILLIAM. — “Improvements in bolts, locks, and other fastenings.” The patentee describes twelve inventions, of which only the following belong to the present series.

1. A dovetail, “so constructed as to be applicable to any kind of framing, whether in metal or in wood, which may require the convenience of being easily fixed and as easily detached.” A screw, called “a lever screw,” is inserted through the male

part of the dovetail, and to such a depth that it shall merely press on the female, "or just enter a slight indentation made in the face of it, so that by tightening the screw you raise the dovetail and so tighten it to any degree that may be required." To draw the shoulder of the male dovetail close up to its joint a V-shaped hole is made "only a small part of the way into the female dovetail, so that the bottom end of the screw, which is of the same V shape, may enter it. The V-shaped hole must, however, be made a little farther back from the shoulder or joint than the screw itself, so that the screw as it enters may keep drawing the shoulder up to its joint as tightly as possible."

2. "An improved fastening for bedsteads:"—At the front of a bracket or box of metal there is rivetted or otherwise fixed "a tapered male projecting dovetail slide," which together with the box is fitted on to the end of a bed rail, and a female dovetail plate is firmly screwed on to the bed post. At the top of the male a lever screw is applied, "which screws against an iron plate at the back of the female," and "serves very much to tighten the whole fastening." 3. "An improved bed tester fastening:"—A male dovetail slide is screwed into the place where the mortise is usually made, and a female dovetail is attached to the rail where the tenon is generally formed. The joint is tightened or loosened by a lever screw. 4. This "consists in the application of the dovetail joint before described to any kind of supporting bracket." 5. "An improved catch or fastening for card, loo, and other tables:"—A flat dovetail slide is introduced "into the handle that draws the catch from the pillar block," and by using the lever screw "as the handle of the male," or by applying it "to any suitable part of the catch" and turning it, the top of the table can be fixed. A spring is applied "at the end of the sliding dovetail to cause the catch to spring backwards and forwards into the pillar block."

[Printed, 1s. 4d. Drawings. See Patent Journal, vol. 4, p. 448.]

A.D. 1847, October 7.—N^o 11,893.

NEWTON, ALFRED VINCENT. — (*A communication.*) — "Improvements applicable to the construction of floors and other parts of buildings, and also to certain kinds of furniture and fittings for buildings." This invention consists in "making all the various articles to which precious and other stones have

“ been or may be applied by fusing with appropriate fluxes the
 “ earthy, alkaline, or metallic substances which constitute the
 “ elements of the kinds of stones to be artificially produced;”
 among the numerous articles mentioned are “ door and furniture
 “ knobs,” and “ tops of various articles of cabinet furniture.”
 The substances, “ in or nearly in the proportions known to consti-
 “ tute the equivalents of the natural stone,” are to be fused with
 the proper admixture of any of the known fluxes, and when fused
 the articles to be made are moulded or otherwise formed of the
 molten substance. “ A smooth and lustrous surface ” is given
 by grinding or by simply dipping in the molten composition from
 which the article has been made.

[Printed, 4d. No Drawings.]

A.D. 1847, November 11.—N^o 11,959. (* *)

SOWARD, GEORGE JAMES.—“ Improvements in suspending
 “ window sashes, shutters, and blinds, and in the construction of
 “ frames for the same;” and these are, “ first, hanging or sus-
 “ pending window sashes, shutters, or blinds, by means of bands
 “ or cords of vulcanized india-rubber, or other similar elastic
 “ materials.”

Second, “ hanging or suspending window sashes, shutters, or
 “ blinds, by means of bands or cords of vulcanized india-rubber
 “ or other suitable material, acting in combination with common
 “ box springs.”

Third, “ hanging or suspending window sashes, shutters, or
 “ blinds of the doors and windows of carriages, by means of
 “ bands or cords of vulcanized india-rubber, or other similar
 “ elastic material, or by bands or cords of suitable substances
 “ in connection with box springs.”

[Printed, 10d. Drawing. See London Journal (*Newton's*), vol. 33 (*con-
 joined series*), p. 262.]

A.D. 1848, January 18.—N^o 12,031.

HICKMAN, JOHN.—“ Improvements in the means of constructing
 “ and connecting parts of bedsteads, couches, and other articles of
 “ furniture to which such improvements may be applicable, and
 “ also in the means of attaching knobs or handles to drawers,
 “ doors, and other parts of furniture.” Rails are connected to posts
 in the following manner:—each end of the rails has a projecting
 tongue hollowed out “ so as at its extremity to present an internal

“ shoulder;” recesses are formed in the sides of the posts to admit the tongues; a metal plate is screwed to the inner angle of the posts; a screw passes through this angle plate into the posts, its inner end bearing against the shoulders of both tongues. Another method :—The posts are furnished with projecting slotted pins which enter holes or sockets at the ends of the rails; vertical holes are bored through the rails for receiving wedge pieces; each post “ is cut away or countersunk so as to form a “ recess to receive the end of the rail.” Laths are arranged so that they may be simultaneously tightened; they are joined to a centre lath which is connected to either head or foot rail at one end by a stud; on the other end is a shoulder wherein is formed a female screw in which a male screw works carried by the rail. Laths are fastened to rails by making at the ends of the laths holes, “ each being furnished with tongues,” which, when the holes are brought over staples on the rails, enter therein. Knobs or handles are attached to doors or drawers by making the shank of a wedge or dovetailed shape and in four portions so that they can be expanded after insertion.

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 33 (*conjoined series*), p. 101; Artizan, vol. 6, p. 228; Patent Journal, vol. 6, p. 253.]

A.D. 1848, October 5.—N^o 12,279.

METCALFE, THOMAS.—“ Improvements in the construction of “ chairs, sofas, and other articles of furniture, for sitting and “ reclining on.” The chair, sofa, &c. is composed of two frames combined by an axis, one frame being high enough to form the back, the other the seat. The lower rails of the frames are connected by a strap “ by which they are kept at any inclination.” To suspend the back and seat cushions, a “ flexible part” of canvas or other strong fabric is fixed to the top of the longer and to the front of the shorter frame. When the article is intended for a camp bedstead, the top of the longer frame is furnished with an upright to support the head, and an additional frame is hinged to the shorter one; this addition will serve at other times for a foot rest.

[Printed, 8d. Drawings. See Repertory of Arts, vol. 14 (*enlarged series*), p. 16; London Journal (*Newton's*), vol. 34 (*conjoined series*), p. 255; Mechanics' Magazine, vol. 50, p. 354; Artizan, vol. 7, p. 208; Patent Journal, vol. 7, p. 2.]

A.D. 1848, November 2.—N^o 12,302.

WINFIELD, ROBERT WALTER.—“Improvements in the construction and manufacture of metallic bedsteads, couches, and sofas.” Shoulders are formed on each pillar, and corner blocks are cast thereon. The bars of angle iron are attached to the blocks by rivets or screws, the bars “being made to extend beyond the said blocks,” and to rest on them. Or one or more conical holes are drilled in the blocks and angle irons, and a pin or pins inserted therein. To tighten the laths, one end is connected to the frame, the other “to a loose piece of angle iron” resting on the opposite side of the frame. Screws work “in concave screws in the frame,” their shoulders being between the frame and the moveable piece. Ornaments of brass and iron are cast on the head and foot rails after the junction of the several parts, so that the junctions are not dependent on the castings. Metal cornices are constructed by leaving the tube or moulding “unsoldered through its whole length,” and attaching the cornice by inserting its upper edge into the opening. The cornice is sometimes strengthened by introducing at the same time a sheet of iron at the back.

[Printed, 1s. Drawings. See *Mechanics' Magazine*, vol. 50, p. 426; *Patent Journal*, vol. 7, p. 61.]

A.D. 1848, December 16.—N^o 12,375.

SMITH, EDWARD.—“Improvements in window blinds, and in springs applicable to window blinds, doors, and other like purposes.” The improvements in blinds consist, 1, in “weighting” the end of the pawl, thereby dispensing with a spring; 2, in affixing “an internal toothed grooved pulley” to the right end of the roller, in connecting the pulleys by an endless wire or cord, and fastening “a tasseled cord” to the “buckle joining the ends of the cord;” 3, in the use of a “torsion spring” of vulcanized rubber or other material. The roller is made in two parts, the left of wood, the right of metal tubing, into the outer end of which is inserted a wooden plug with a metal cap. A ratchet wheel is fixed to the outside of the cap. A box containing a pawl and spring is applied to the ratchet by means of a spindle which passes through the centre of the ratchet, cap, and plug, into the tubing; it projects outwards, terminating in a square head which fits into an aperture in the bracket. A torsion

spring enclosed in a tube is made fast at one end to a block inside, and at the other to the spindle. Different forms may be given to the spring. This spring may be employed for closing doors by enclosing it in a box; it is fastened at bottom to the box, and at top to a fixed spindle. An arm projects from the box and presses against the door. For closing a door either outwards or inwards two springs are required; a pin is stepped in a plate screwed to the floor; and a bearing, forming the upper end of the box, rests on the top of the pin as a centre on which the door turns. The springs are fastened below to a collar on the pin, and at top to the bearing.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 50, p. 594; *Patent Journal*, vol. 7, p. 142.]

A.D. 1848, December 28.—N° 12,392.

POOLE, MOSES.—(*A communication.*)—"Improvements in the " manufacture of heels for boots and shoes, of swivels, of bag " fastenings, of revolving furniture, and of the connections of " pipes for gas and other fluids." This invention relates to the mode of fastening the parts of the above articles, which is effected by means of male and female screws so combined " that the male " screw having passed through the female screw, the stem of the " male screw shall alone remain in the female;" the thread of the male then acts as a stop to prevent the return of the male out of the female screw. In a boot or shoe the part containing the female screw is secured to the heel, and the part furnished with the male screw and " a portion of leather or other suitable matter " for a heel " is screwed on to it, " till the thread passes beyond " the thread of the female screw." In the upper part there is a cut, and in the lower part four cuts, " the object being to insert a " pin or stop to prevent movement." In a swivel the female screw is a nut, and the male screw " constitutes the end of the " bent horns." In a bag fastening one portion of the frame contains the female, the other the male screw. In a furniture castor the female screw is formed in the socket, and the male on the horns, or this arrangement may be reversed. In a table or other surface supported on a pillar or leg the latter has the male screw formed on it. In a pulley " such as is required for furni- " ture where the frame of the pulley and pulley require to be " taken down at times, and also where it is required that the " frame should be capable of being moved round," the stem is

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formed with a male screw which passes through a female screw in a plate. To unite two portions of a pipe, the socket of one portion has a female screw cut inside, and the male screw is cut on the other portion.

[Printed, *8d.* Drawing. See *Mechanics' Magazine*, vol. 51, p. 16; *Repository of Arts*, vol. 14 (*enlarged series*), p. 351.]

A.D. 1849, January 4.—N° 12,401. (* *)

THOMAS, WILLIAM.—(*Partly a communication*).—This invention consists,—“First, of a mode of weaving the webbing for Venetian blinds by causing the connecting parts to be woven together with the longitudinal parts, so that the ladder formed webbing, in place of being formed as heretofore by connecting the longitudinal pieces of webbing by narrow tapes sewn to the two longitudinal ones, the whole ladder is produced in the act of weaving.

“Secondly, the invention consists of manufacturing ornamental roller blinds of looped fabrics.”

“Thirdly, the invention consists of modes of manufacturing short or dwarf blinds of woven fabrics, so as to imitate the short blinds now made of wood or wood and metal; and this part of the invention also relates to a mode of ornamenting short or dwarf blinds made of woven fabric, such fabric not being metallic.” The ornamenting is performed by “printing or stencilling woven fabrics with impressions to imitate perforated metal, or to imitate woven wire cloth, or to imitate short lath blinds.”

“And, fourthly, the invention consists of a mode of manufacturing short or dwarf blinds, by employing looped fabrics with imitations of frames printed or produced thereon.”

[Printed, *4d.* No Drawings. See *Mechanics' Magazine*, vol. 51, p. 20; and *Patent Journal*, vol. 7, p. 164.]

A.D. 1849, February 8.—N° 12,459.

FORLONG, RICHARD PANNELL.—“Improvements in castors for furniture.” The improvements consist in making the wheel of glass and the horns and socket or plate of nickel silver, the advantage whereof is that the appearance is much improved, and that, when musical instruments are supported on such castors, they are insulated, and the tone is “much improved and increased in power.” The wheel is made in a metal mould, and a hollow, or solid metal spindle “is inserted at the moment the glass is,

"placed (in a soft or moulten state) in the mould." The periphery of the wheel is ground in order to make it perfectly round, and the sides are grooved and polished to make them flat and run true in the horns. The patentee prefers to grind the wheel in the following manner:—It is mounted on the points of two spindles, the ends of which enter the hollow spindle of the wheel and are furnished with two cheeks covered on the inside with leather to prevent them from slipping. The periphery is brought into contact with a grindstone, on the axle of which are two pulleys, one on each side; from these a band passes to and drives a second pair of pulleys on the spindles that carry the wheel. The bearings of the spindles "are made slightly adjustable by means of screws," so that, as the periphery is ground away, it may be pushed forward, and to prevent the driving bands from being loosened by this adjustment the pulleys "are made slightly conical to compensate for the adjustment."

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 163; *Mechanics' Magazine*, vol. 51, p. 141; Patent Journal, vol. 7, p. 216.]

A.D. 1849, July 4.—No 12,695.

CHAUFFOURIER, PIERRE AUGUSTIN. — (*A communication.*) — "Improvements in castors." A ball of metal, partially enclosed in a frame or cup, is employed instead of the ordinary wheel and horns. The ball is made in three portions, two segments of a sphere and a "segmental plate" between the two; the plate is perforated in the middle with a hole "which is perpendicular to the basis of the said plate," and through the hole passes an axis on whose extremities the two segments are firmly rivetted; the axis "acts freely in the hole." The middle of the plate "is made thicker in order to provide for a good setting and to obtain a suitable friction for the transversal axis;" the two "external extremities," called ears, are also made thicker to receive pivots which are formed by the ends of two screws set in the frame; but in order that the segments "should approach as close each other as possible, the other external extremities of the plan" of the plate are made thinner. On the upper portion of the frame is a projecting piece which serves to connect the castor with the article of furniture; this can have the form of a socket, "or be replaced by any other suitable means."

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 36 (*conjoined series*), p. 23; *Mechanics' Magazine*, vol. 52, p. 36; *Practical Mechanics Journal*, vol. 8, p. 119; Patent Journal, vol. 8, p. 196.]

A.D. 1849, July 9.—N° 12,701.

LAURIE, ROBERT WILLIAM.—“Improvements in means or apparatus to be employed for the preservation of life and property, such improvements or parts thereof being applicable to various articles of furniture, dress, and travelling apparatus.” The patentee renders “mattresses, pillows, cushions, and chair bottoms,” and similar articles, buoyant “by the insertion into them of a tube or tubes or chambers either of a waterproof or close textured fabric or material, either separate from each other or in connection, stuffed with any suitable buoyant material, the interstices between such tubes, if any, being filled with cocoa-nut fibre, feathers, hair, straw, or other suitable distending material.” The outer covering may be of any waterproof fabric or of any close textured fabric, “although not originally waterproof,” and single or manifold, as may be necessary. He attaches to his mattresses and other similar articles, either externally or internally, pieces of cork or other buoyant material steeped in any suitable waterproof solution. These additions “may be attached to articles of the mattress class already made, the finished article having strings fitted to it to afford a hold for persons in the water.” “Or such articles may be rendered buoyant on the principle of inflation,” by arranging a series of air-tight tubes or chambers to communicate with a “compound tubular valve,” so that the whole of the tubes may be inflated simultaneously, “whilst each tube is nevertheless made independent of its neighbour.” The following is the construction of the compound valve:—The inner ends of a series of tubes or air passages (in connection with compartments formed or placed in the article to be made buoyant) open into “the shell or outer tube of the inflating valve;” an inflating tube, “having in it a range of openings corresponding to those leading into the connecting tubes,” is fitted to turn or slide in the interior of the shell. When the article is inflated, the openings are simultaneously closed by moving the inflating tube “a short distance longitudinally or by turning it partially round.” When necessary, “the spaces between the openings may be made air-tight by a packing ring passed round the outside of the inner tube,” and, when it is desired to have the power of inflating each tube separately, “the valvular openings are to be set out of line with each other.” The arrangement of the parts admits of numerous modifications. The tubes may be placed in stuffed mattresses

" in a collapsed state, ready for inflation when required, or they " may be made to constitute the body of the mattresses in themselves when inflated." The patentee makes his mattresses convertible into boats; he adds to them "a loose waterproof covering or bag, the open mouth of which is brought over the " centre of the mattress and arranged so as to receive the lower part " of the body and tie closely round the waist. The sides and " ends of the mattress are surrounded by wood or cork, forming " its mouldings or edge pieces when used as a berth, and a set of " moveable poles, on which the mattress rests when used as a " bed, may be used as oars;" handles or loops are attached to the sides "to serve as thole pins or rests for the oars." Or the mattress may be placed "on a solid bottom of wood or cork, and " having a loose waterproof cover to receive both the person and " the bedding when employed as a lifeboat, and in order to " provide breadth of beam the covering is made with side pockets " or bags for the reception of buoyant material, with additional " rods and cordage to keep them distended." He also constructs a buoy or float "by means of bags or simple sheets of a water- " proofed fabric or of canvas or other close textured material to " be distended over chairs, tables, or similar articles of a buoyant " character." The other inventions described in the specification do not belong to the present series; they relate to rendering buoyant various articles of wearing apparel, baths, bags, port-manteaus, &c., and to the construction and use of rafts and floats.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 52, p. 39; *Practical Mechanics' Journal*, vol. 2, p. 251; *Patent Journal*, vol. 8, p. 236.]

A.D. 1849, August 1.—N^o 12,723.

POTTS, THOMAS. — "Improvements in apparatus used with " curtains, blinds, maps, and plans." The first improvement consists in using only one tubular ring, having an open joint, for suspending curtains, &c. In making the opening the edge of one thickness of metal is turned back over the other. The second, in casing iron or zinc with brass or other metals to form such tubular rings. The third, in producing ornamental tubing for the like purpose; this is effected by perforating the metal with any device, drawing it into tubing, and introducing another tube in contrast with the outer one, or by inserting any colored substance. Woven wire may be used instead of perforated metal.

The fourth, in forming the tubing "with spiral cords or lines in the direction of their length." Four methods of opening and closing curtains are described. 1. A threaded shaft having a pulley at the right end is supported in bearings—if there are two curtains, the threads must be divided, one part right, the other left—on the shaft are two runners with projections on the inside to pass between the threads. The front ring of each curtain is connected to a runner. 2. A suitable spring, by preference of vulcanized rubber, is secured at one end of an open tube in which it is enclosed. The supports of the curtains are attached to the spring so as to move with it. At the other end is fastened a cord which passes over a pulley. The cords may be arranged to draw the curtains in the middle of the window. 3. The rod and rings, both enclosed in an open tube, may be of such shape that the rings may slide but not turn on the rod. 4. The opening and closing is effected by means of lazy tongs. Small wheels, running on rails, are fixed to some of the middle rivets. On the rails are pulleys over which the cords pass, one end of each being fastened to the left end of the tongs. Alterations in the tongs and pulleys are required for bed curtains. Roller blinds are made to draw up inside a metal tube. A rod, having a pulley at the right end, is supported inside the tube; the rod is run through the hem of a tape which projects about an inch from the tube for the ready attachment of the blind. At the bottom of the blind is a seam for a wire to pass through, and the rod and seam are enclosed in an open tube. In conservatory blinds the bottom is supported by runners. An apparatus to be used with external blinds is composed of (1) two upright shafts, "geared together so as to be capable of a simultaneous movement;" (2) two bars hinged one to each shaft and held in position by a link whose lower end is connected to a collar having in it a spiral groove to receive a pin projecting from a bearing on the shaft; and (3) a handle, pinion, and toothed wheel to turn the left shaft. The blinds are attached to the bars. The uprights may be arranged to act independently. Methods of manufacturing racks:—1. By cutting the teeth in one side edge of the case; a strip of metal is formed with a series of notches; the edges are slightly turned up; the strip is drawn into open tubing and cut to the required length; nicks are cut across, and the ends are flattened and drilled for screws. 2. By piercing the strip with a row of holes which serve as notches. 3. A "paddle rack;" a plate to be fastened to the window frame is

provided with two guides in which a bar slides. On the bar are teeth which are taken into by the teeth of a pinion and also by the teeth of a spring catch. The cord passes under a pulley at the top of the bar.

[Printed, 2s. 10d. Drawings. See *Mechanics' Magazine*, vol. 52, p. 116; *Patent Journal*, vol. 8, p. 246.]

A.D. 1849, September 27.—No 12,786.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—"Improvements in the manufacture of knobs for doors, articles of furniture, or other purposes, and in connecting metallic attachments to articles made of glass or other analogous materials." Among the many articles enumerated to which this invention is applicable are door and furniture knobs, curtain pins, table fret, bell-pulls, and ornaments for holding the rods from which window curtains are suspended. The invention consists "in forming an attachment between metals and minerals, whereby any appreciable disturbance of the crystallization of the mineral is avoided, in consequence of the attenuated form given to the metal." The shank (which is "inserted into the mineral or vitreous matter at a proper stage of the process") is either a metallic tube of cast, wrought, or rolled metal, or a strip of metal, "consisting of one or more diverging flanges;" rolled or sheet metal is preferable, "as it is usually more free from burrs or irregularities;" it is made out of "the smallest amount of metal consistent with suitable strength." A longitudinal slit allows play, that enables the metal to adapt itself reasonably and sufficiently to the set of the contracting mineral." A slight upset on the end of the shank "forms a strong and tenacious head, around which the mineral coils with an uniformity that leaves the knobs precisely the same in size and figure, and consequently complete fellows;" an upset, however, is not absolutely necessary, as the shank holds well without it, especially if the lower end is made bell-shaped. There are many drawings of knobs, shanks, escutcheons, and modes of attachment; one of the last is "by screwing the shank into the door or piece of furniture, by means of a thread cut thereon, and securely fastening the knob by inserting a wood screw into the shank from the other side of the door or piece of furniture, a thread being cut in the inside of the hollow shank for that purpose." When a knob is required on each side of a door, "another knob with a

" male screw on the end can be substituted for the wood screw." One drawing " represents in perspective a suitable press for the " manufacturing such articles as are german to this invention," but no description thereof is given.

[Printed, 1s. Drawing. See London Journal (*Newton's*), vol. 37 (*conjoined series*), p. 170; *Mechanics' Magazine*, vol. 52, p. 280; *Patent Journal*, vol. 9, p. 53.]

A.D. 1849, November 2.—N° 12,821.

COWLEY, JOHN, and HICKMAN, JOHN.—"Improvements in " the manufacture of bedsteads, chairs, tables, couches, and " tubular and hollow articles." 1. Connecting side and end rails :—Corner pieces, joined to the posts or cast therewith, have horizontal sockets into which the ends of the rails fit. Screws working through the corner pieces secure the ends. The joint may be strengthened by a dovetail in the corner piece. In chairs and couches a wooden frame is bolted or screwed to the iron rails ; to this are attached the upper framing, webbing, &c. The leg and post may be a " piece of angle iron " passing through a corresponding hole in the corner piece and keyed up by a wedge, or secured from slipping by a screw or stud. Or it may be fitted against the corner piece and screwed to it. 2. An elongating stretcher is made by applying to the side rail a socket for the reception of the end of a rod ; a nut which works on the screwed part of the rod bears against the " countersunk end of the socket," which portion is of a conical shape. 3. "Compound elastic or " spring laths " are formed of two single laths rivetted or otherwise united at their ends and having between them double spiral, or curved plate, or common helical springs. 4. Ornamental pillars are made of metal cast or stamped with a perforated or openwork pattern ; a lining of velvet or other fabric is introduced, or pieces of enamel or other substance are cemented between the interstices. 5. To cast a long narrow hollow pillar an apparatus is employed composed of a core rod stretched in a frame, its ends being passed through short tubes connected to the frame ; of supports for the projecting ends of the core rod ; and of a " swinging mould board or template suspended by straps or " slings " from the tubes. 6. A telescope table is extended by means of a screw fixed to the framing of one end and working in threaded bushes on the transverse framing of the slides.

[Printed, 2s. Drawings. See *Mechanics' Magazine*, vol. 52, p. 377; *Patent Journal*, vol. 9, p. 127.]

A.D. 1849, November 10.—N° 12,838.

STURGES, RICHARD FORD, and HARLOW, JONATHAN.—“Improvements in bedsteads.” First, in giving elasticity to the angles of the frame:—a spiral spring is contained in a box formed round each post, and an end of each rail rests on a spring. Or “tabular pieces” of india-rubber are placed round the posts and the ends are laid thereon. Other sorts of springs may be used. Second, in making laths of gutta percha which may be strengthened with metal ends:—also in making metal laths with bent parts acting as springs “in one or more parts of their length.” Third, in constructing the frame of wrought iron:—two pieces are bent into a suitable shape, the ends of one piece having a right, and the ends of the other a left-handed screw, which are connected by screw nuts. In some cases springs are applied to support the head rail. Fourth, in uniting the posts, legs, and rails by pins projecting from the posts and passing into holes in the legs and rails. Fifth, in joining the frame by passing the head and foot rails through the side rails; tie rods, serving as valance rods, keep the rails together by entering recesses in the head and foot rails.

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 52, p. 398; *Patent Journal*, vol. 9, p. 91.]

A.D. 1849, December 3.—N° 12,874.

PARADIS, JOSEPH.—(*A communication*).—“Improvements in “the manufacture of elastic mattresses, cushions, and paddings, “part of which improvements is applicable to other purposes “where sudden or continuous pressure is required to be sustained “or transmitted.” The invention consists “in the employment “of a spring of peculiar construction for forming the internal “part” of a mattress, &c.; it is made of a single piece of iron wire inserted, but not fixed, into holes in the ends of a roller round which the middle portion of the wire is coiled to form a helical spring. The springs are arranged in pairs in such manner that each pair when pressed upon will “act or bend out in “opposite directions;” they may be placed “opposite to each, “or arranged alternately.” In making a mattress or seat the springs are secured at their lower ends to cross pieces fixed to the side framing, and at their upper ends to flexible straps fastened to the end framing and connected transversely by rods or bars.

These springs may be applied to buffers and to railway and other carriages.

[Printed, 10*d.* Drawing. See Repertory of Arts, vol. 17 (*enlarged series*), p. 85; London Journal (*Newton's*), vol. 37 (*conjoined series*), p. 89; Mechanics' Magazine, vol. 52, p. 459; Patent Journal, vol. 2, p. 115.]

A.D. 1850, May 30.—N° 13,086.

HARLOW, JONATHAN.—“Improvements in the manufacture of bedsteads and other like articles for sitting or reclining on.” The first improvement relates to “the manner of fixing suitable parts of wrought iron joints to tubular or solid iron posts:”—A post “with the suitable parts” is placed in a mould, and a boss is produced which securely holds post and parts together. The parts are sometimes formed with screws to receive nuts, “and the ends of the rails simply have each a hole through for the passage of the screw.” Or the rails may be tubular and secured by “slot and neb connections.” The second, to a mode of “fixing part of a wrought iron joint to the end of a solid or hollow rail for a bedstead:”—If the rail is solid, it is opened and the part is introduced, “then the two parts are to be welded together;” if hollow, the part is to be formed to enter the same, and the two are to be welded together. The third, to a method of “fixing part of a dovetailed joint for a head or foot rail;” it is “fixed by soldering or brazing.” The fourth, to “fixing wrought iron fastenings for the rails” to posts:—this is done “by forming the parts of fastenings on to hoops or rings of wrought iron, and then heating the same and allowing them to cool” and shrink on the posts. The fifth, to “a mode of forming parts of the ornamental ends or heads and feet” of bedsteads:—the centre casting is combined with the wrought parts, and the whole is fixed to the frame by casting thereon other portions. The sixth claims the employment of “eye rivets, with the use of casting,” for fastening the wrought iron parts of the head and foot ends of bedsteads. The seventh relates to stretchers; one sort consists of an iron bar fixed at its ends to each rail; each bar has a screw through it; another consists of two levers at the ends of a threaded bar; the rails are pressed out by drawing the lower ends of the levers nearer together. The eighth, to combining wooden posts and metal rails:—plates having affixed thereto or formed thereon “parts of the fastenings for metal rails,” are secured to the posts.

[Printed, 2*s.* 4*d.* Drawings. See Mechanics' Magazine, vol. 53, p. 457; Patent Journal, vol. 10, p. 107.]

A.D. 1850, August 5.—N° 13,213.

KANE, FRANCIS. — "Improvements in reclining chairs, in castors for chairs, and other articles of furniture, and improvements in presses." The back of the chair moves on the middle portion of the frame by means of pin joints and a rack and spring catch; the middle portion moves on the lower by means of plates fixed on the middle and axes fixed on the lower; the leg rest, by which "the parts are kept in a state of balance," moves on axes in the front of the middle portion, while the upper parts of its side rails are pinned to rods which connect it to the lower portion. The seat is fastened to the top of the back and to the front rail of the middle portion. A cord for releasing the spring catch is suspended under one of the arms. Modifications. 1. There is no rack, &c., the back and middle constituting one framing. 2. The leg rest may be removed and the axes placed further back to compensate for such removal. 3. A chair on the same principle as regards the leg rest and capable of being folded up; the frame is composed on each side of bars crossing one another and connected at the middle by a pin joint and at top and bottom by rods; the back parts are pinned on each side to one of the cross bars and united at top by a rail; notched levers "take and hold projecting studs or axes on which the connecting rods of the leg rest move;" crutches "retain the back." In castors the improvement consists in placing in the horn a spring catch "which holds the parts together, and yet allows of the horn and roller being readily removed from the socket." In presses inclined bosses are fixed on the axis of the fly wheel; these work on inclines and press down or raise up the socket of the punch.

[Printed, 2s. Drawings. See *Mechanics' Magazine*, vol. 54, p. 136; *Patent Journal*, vol. 10, p. 221.]

A.D. 1850, November 21.—N° 13,361.

GREENOUGH, JOHN JAMES.—"Improvements in the construction of chairs, couches, and seats; parts of which improvements are also applicable to various purposes where springs for supporting heavy bodies and resisting sudden and continuous pressure are required."

[No Specification enrolled.]

A.D. 1850, November 30.—N° 13,378.

BURT, HENRY POTTER.—“Improvements in the manufacture of window blinds,” that is to say of Venetian blinds. The laths are of thin sheet metal embossed or perforated with an ornamental pattern. A hollow metallic spindle turns in supports and carries three pulleys (two on it and one at the right end) and a ratchet wheel acted upon by a pawl and spring. The laths are connected at their edges by chains or cords which pass over and rest on the spindle. Two chains or wire ropes pass up through the laths and are attached to the pulleys on the spindle; this is turned by means of an endless cord or chain which passes over the end pulley and under a pulley fixed to the frame. The spindle, &c., may be employed with wooden laths.

[Printed, 10*d*. Drawing. See *Mechanics' Magazine*, vol. 54, p. 457; *Patent Journal*, vol. 11, p. 172.]

A.D. 1850, December 5.—N° 13,383.

HINLEY, BENJAMIN.—“Improvements in the manufacture of castors.” The invention consists in casting the horns on to the spindles or axes, which are so formed “that when enclosed in the cast metal, they will not draw out, but admit of the parts turning freely.” The axes are made with protuberances or grooves, or with both; they are by preference of wrought iron, but they may be of malleable cast iron or of other metal which will not unite with the cast metal of the horns. They are laid in the moulds used for casting the horns as cores, “and in order to prevent the cast brass or metal used cooling too tightly on the parts of the axes which are enclosed within the cast metal, the axes at those parts are to be coated over before being put into the moulds with any suitable powder, such as blacklead.” The powder is mixed with water or other fluid and applied to the parts which are to be enclosed; when the parts are dry, the axes are ready to be placed in the moulds. When the horns are dressed and finished, they are warmed, “and a small quantity of oil” is applied, so as to pass to the axes. The lower part of the axes may be wholly enclosed in the horns, “or the same may come through.” The castors may be made with a socket or with a screw and plate.

[Printed, 6*d*. Drawing. See *Repertory of Arts*, vol. 18 (*enlarged series*), p. 10; *London Journal (Newton's)*, vol. 41 (*conjoined series*), p. 270; *Mechanics' Magazine*, vol. 54, p. 475; *Patent Journal*, vol. 11, p. 121.]

A.D. 1850, December 7.—N° 13,390.

PAPPS, FRANCIS.—“Improvements in metallic and other bedsteads, mattresses, and curtain rods, and in the coating or covering of bedsteads and other articles wholly or in part composed of metal.” First improvement, bedsteads or sofas capable of extension and contraction :—The frame is made in three portions, and the middle portion slides in grooves cut in the others; the mattress is made in three parts connected together, so that when the frame is contracted, the end parts “will bend over and cover the ends of the frame as cushions.” Second, portable bedsteads :—The side rails are jointed; the sacking and head and footboards are formed of laths arranged lazy-tongs fashion; the sacking laths are connected to the side rails by means of slotted plates and studs, and to the head and foot rails by rivets; the head and foot laths are kept in place by slots in the posts, or by rings at their ends which slide over the posts; they are formed with rings on the top laths; these are placed over pins on the posts and held down by screw knobs. Third, a bed framing for invalids :—A frame divided into three parts (jointed together and held rigid by bolts or catches) is covered with canvas or other sacking and rests upon a mattress; sets of lazy-tong levers, connected at top and bottom by bars which slide in slots in the head and foot parts of the frame and in slots in the side rails of the bedstead, are raised or lowered by screws which work in screw sockets in the bars and “in bearings formed in the framing of the bedstead;” the middle part “may be furnished with an opening to receive a commode pan.” Fourth, laths and sacking :—The latter is “divided into two or more parts,” and eyelet holes at top and bottom (or short pieces of slotted metal) may be substituted for longitudinal laths; the former “are embedded in a sheet or sheets of gutta percha or compounds thereof” by heating them to about 220° Fahrenheit “and pressing them whilst hot on to the surface of the gutta percha;” they are jointed “to admit of the sacking being folded into a small compass.” Fifth, the construction of mattresses :—The mattress is made in three compartments connected or hinged together “so that the whole may be folded up;” each compartment consists of an under surface of sacking or laths, helical springs thereon, an upper surface of laths, or of a sheet of gutta percha or other suitable flexible surface, and a mattress of horse-hair, wool, or other mate-

rial; each is enclosed in a case. A "very portable spring mat-tress" has each compartment made by enclosing helical springs between two sheets of gutta percha. A second improvement in mattresses consists in enclosing the materials used as stuffing in "a waterproof and airproof case." A third, in employing for stuffing "rock sponge rendered non-absorbent and elastic by being saturated in waterproof solution or solutions of india-rubber or compounds thereof and afterwards dried;" the process is described in the Specification. Sixth, the construction of curtain poles:—A tube open in the lower side is supported at each end by a moveable cross bar, to which is attached a roller; inside the tube is a rod carrying rings with eyes and having at each end a screw or pin for the attachment of an ornament. For very heavy curtains "the upper part of the rings may be furnished with a roller." The method of fastening the curtains and cords is explained. Seventh, coating bedsteads and other articles wholly or partly of metal "with metal or their alloys:—" "A current of electricity" is employed; the process is described in the series of Abridgments entitled Electricity. Eighth, coating such articles "with silicious compounds known as enamels:—" The improvement consists in "mixing the levigated enamel with water rendered glutinous," or "moistening the surface of the metal with such glutinous water, and sifting or dusting on the levigated enamel, and when dry exposing to the heat of an enameller's furnace." The ninth improvement is the application of enamels to "metals or metallic articles which have been previously coated or covered (by electric deposition or otherwise) with a less oxidizable metal than that of which the metal or metallic articles to be enamelled is composed." Tenth, "the application of glass and porcelain or biscuit ware to metals in sheet or fashioned into articles:—" The surface of the metal or article is coated "with a more fusible silicious compound than that of which the casing or plating is composed." The ingredients of the compound are powdered flint glass 50 parts, calcined borax 25 parts, minium 15 parts, melted together and ground into powder; or 20 to 25 parts of tin calcined with 100 parts of lead and ground to powder, and 100 parts of silicious sand calcined with 25 parts of sea salt and 25 parts of minium and ground to powder; 100 parts of the former to be mixed with from 40 to 50 parts of the latter. The process is described with reference to "a basin of iron." Eleventh, coating bedsteads or other articles

with gutta percha, separately or combined with other materials :— The post of a bedstead is passed through a tube of gutta percha, and the space between (if any) is filled with plaster of Paris or other composition; or the post is heated to from 200° to 330° , and gutta percha is applied to the hot surface, “giving to the same while in a warm and plastic state an ornamental surface” by inclosing within moulds or dies.”

[Printed, 1s. 6d. Drawings. See *Mechanics' Magazine*, vol. 54, p. 479; *Patent Journal*, vol. 11, p. 243.]

A.D. 1850, December 7.—N^o 13,395.

EVEREST, JOHN, and OSBORNE, GEORGE.—“Improvements in commodes, and in fixed and portable water-closets.” The commode when closed represents an ottoman with a stuffed top and with “rosette handles placed in the centre of each end.” Arms or elbow sides “which are fixtures to the top” slide into recesses in the case; they have “a slight springing tendency in an outward direction,” so that they will not return into the slots “till obliged so to do by the application of slight lateral pressure;” studs may be applied “for the better retention of the arms in their position.” The seat of the commode is formed “with a hollow concavity at top in the form of an oval.” The pan is “long and narrow and furnished with a valve cover,” and coated on its edges with vulcanized india-rubber or other elastic substance “fitting so tightly to the sides of the pan as to prevent any effluvium” escaping. For the removal of the cover it is necessary slightly to raise the india-rubber valve by means of a leather strap attached to it, “by the admission of air equalizing the pressure of the atmosphere.” The component parts of the fixed watercloset are a flushing chamber, delivery pipes, a basin, elastic tubing “fitting into concentric groove at top of basin for the purpose of fitting closely the underneath portion of the seat,” an outside crank, a crank pin, a cup and balance valve, a valve shaft, “one end of which is keyed to the crank,” tappet links working in bracket centres, a friction roller joint, a motion link, a link fastening to the closet cover, a supply water pipe, a supply chamber, a circular drop valve, valve rods and lever, and a chain for giving motion to the drop valve. The improvement is that raising the closet cover “is made to communicate motion to the valves and other working parts.” Portable waterclosets are constructed “with the several mechanical arrangements lastly

"above described being adapted thereto, the discharge or soil pipe being omitted."

[Printed, 1s. 4d. Drawings. See *Mechanics' magazine*, vol. 54, p. 478; *Patent Journal*, vol. 11, p. 138.]

A.D. 1850, December 12.—N^o 13,411.

BUNNETT, JOSEPH. — "Improvements in doors, windows, shutters, and blinds." First, the construction of revolving metal shutters:—the laths are curved or bent, and the hinges are rivetted to them, "the male part" of the hinge being "united to the female part" of the adjacent hinge by a pin. Second, an apparatus for raising and lowering such blinds:—a worm wheel is keyed upon the roller; an upright shaft, having at its upper end an endless screw which turns when the shaft is acted on by bevil gear below, is supported in the right bracket. To relieve the raising gear counterbalancing weights are employed; these are attached by a band or chain to a drum fixed on the left end of the roller; they are jointed so as to form a continuous chain, and a box is provided for their reception. Third, to prevent the lifting of shutters from the outside, a stop chain is affixed, one end to the top of the shutter, the other to the roller; it consists of a series of three or more flat plates "so formed and arranged as to bend only in one direction." Fourth, to ensure the closing of an inner sliding door by the shutting of the outer one, the inner door, partly counterbalanced by weights, is caught and stayed by a detent; to the bottom rail or other part of the outer door is fixed a rod or chain led by cranks to the detent; the closing of the outer door releases the detent. Fifth, to open and close shop blinds "without the necessity of going outside:"—on one end of the roller is a worm wheel; on the top of the winding spindle is an endless screw, and at bottom bevil gear. The blind irons by reason of their joints have a tendency to draw out the blind; a supplementary spring may be placed between the shop front and the blind iron. The same object may be effected by an endless chain, pulleys, ratchet and pawl. Sixth, to construct window panes so as to facilitate the admission of air:—the pane is composed of a series of strips of glass with bevelled edges lying in "parallel planes one before the other;" each series is mounted in a light metal frame; the two are mounted in an outer frame, one being fixed, the other capable of sliding up and down. Another mode of ventilation for shops consists in forming

air passages, "between the edges of the plate glass and the " rebate of the sash bar," communicating with the external air by openings and with the inside by other openings not in a line, but "intermediate to each other;" the inner openings are covered with perforated plates to which a sliding cover is added. For dwelling houses there are openings formed on the outside of the sash bar through which the air enters upwards, "and striking " against a deflecting plate passes into the body of the bar, " which is hollow, being formed of two metal plates." Both plates are perforated exactly alike; the holes are closed by moving the inner one (which slides) by aid of a stud. For carriage windows an open space is formed in one or more of the rails and a perforated plate is fitted on each side; the inner plate "has " another plate perforated to match" which is moved by a stud; between the inner plates is a deflecting plate causing the air "to " pass circuitously." A similar contrivance may be placed in any convenient part of a door. For cabin windows or scuttles a plate of thick glass in a metal rim is hinged to a frame which is " moulded and doubled," being composed of an outer and inner member, in each of which are corresponding openings; these are opened or shut by turning the inner moulding. The openings in the outer moulding "are fitted with trellis work, or other small " apertures, for the purpose of breaking up the water should a " sea strike the ventilator while open." To move round the inner moulding a screw is employed, "which works in the frame of the " scuttle, and in a quick threaded screw beyond, which takes into " cogs or teeth cut in the lower edge" of the moulding.

[Printed, 1s. 4d. Drawings. See *Mechanics' Magazine*, vol. 54, p. 513; *Patent Journal*, vol. 11, p. 173.]

A.D. 1851, January 21.—N° 13,464.

PACE, EDMUND. — "Improvements in bedsteads, couches, " chairs, and other like articles of furniture." Four inventions are claimed. First, forming the frame rails of the same sheet of metal drawn into the required shape by passing the metal while in a cold state through or between suitable dies or rollers. Second, constructing the joints by which rails are connected to pillars or legs:—two connecting pieces are bent "so as to form a " knee;" the curved parts are just of sufficient size to grasp a bed pillar or a couch leg; when they are rivetted together, a portion is punched out from the upper edge of each, and a

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portion is cut away from each end; these portions are laid upon the inside of the rails to be united, and are secured by overplates rivetted to the rails; the rails are fixed by driving them down on the connecting pieces. If the pillar or leg is of wood, the connecting pieces are screwed or otherwise fastened to the sides thereof. The several parts of the joints may be cast. Third, methods of constructing and connecting metallic laths:—1. One end of the lath is bent into a hook; the other is bent at right angles and has a spring affixed to it; these ends are inserted into mortises in the rails. 2. The lath is made in two parts; on one two rivets are fixed; in the other slots are cut sufficiently long to allow of a short sliding of the parts; a helical spring is wound round the portion between the rivets or placed between the overlapping portions. Fourth, a mode of fixing the perforated paneling of a child's cot:—the panel frame is tubular and slotted throughout its length; the edges of the paneling are inserted into the slot and soldered or otherwise fastened.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 55, p. 79; *Patent Journal*, vol. 11, p. 208.]

A.D. 1851, March 4.—N^o 13,541.

NEWTON, WILLIAM EDWARD. — (*A communication.*) — “Improvements in portable bedsteads and in sacking bottoms.” The bedstead is composed of four telescopic corner posts united by four sets of lazy tongs. The lower extremities of each set are jointed to the lower ends of the posts, the upper extremities being connected to the posts by sliding rings. The other lower and upper joints are attached in like manner to short vertical posts. The middle and upper tubes of the telescopes are retained, when drawn out, by spring catches. At the head of the middle tubes is a ring or other fastening for the sacking. Curtain rods can be fixed on the top of the upper tubes. The sacking is improved by inserting gores or gussets for the reception of the projecting parts of the body; it is attached to the corner and vertical posts by means of hooks. By placing the rings of the foot corner posts at the bottom of the middle tubes the sacking will be raised at the other end so as to form a support for the head of the person reclining thereon.

[Printed, 8d. Drawing. See *London Journal (Newton's)*, vol. 40 (*combined series*), p. 180; *Mechanics' Magazine*, vol. 55, p. 219; *Patent Journal*, vol. 11, p. 290.]

A.D. 1851, March 25.—N° 13,576.

WOODS, THOMAS, and WINFIELD, ROBERT WALTER.—
 "Improvements in bedsteads and couches or articles for
 "sitting, lying, and reclining upon." The first part describes a
 ship's cot or sofa bedstead :—The frame on which the sacking is
 stretched is jointed to end pieces; these are furnished with
 buttons whereby they are suspended on the vertical ends of the
 fixed frame. When the buttons are inserted into lower holes, the
 sacking frame drops into recesses in the horizontal part of the
 fixed frame, and the cot becomes a sofa. The second describes
 additions to an ordinary camp bed for the purpose of tightening
 the sacking:—a semicircular rod having a joint in the middle and
 a rack at one end is inserted into sockets at the corners of two of
 the sides; a spring pressing against a lever causes it to engage
 in the rack. The joint in the rod may be dispensed with. The
 third describes methods of constructing corner pieces of metallic
 bedsteads :—this is carried out either by cutting iron tubing into
 lengths of the proper size, and then planing away portions of it
 "parallel or nearly parallel to the axis thereof," or "by rolling
 "bars of iron of suitable forms, and afterwards welding the same
 "together and cutting the compound bars so formed into suitable
 "lengths." The fourth describes a method of attaching the
 panels or ornaments of bedsteads, couches, &c. :—the framing of
 the rails into which the panels are to be inserted is made of
 metallic bars of the required figure, and the panels are made of
 such thickness that when inserted they are flush with the edges
 of the framing.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 55, p. 297;
Patent Journal, vol. 12, p. 40.]

A.D. 1851, April 15.—N° 13,588.

BETJEMANN, HENRY JOHN.—"Improvements in connecting
 "parts of bedsteads and other frames, and in machinery employed
 "therein." The connection between the posts and rails is that
 of "male dovetails" on the latter entering mortises in the former.
 The mortises are cut by a machine composed of the following
 parts :—1, a wooden bench; 2, a pair of stationary and a pair of
 shifting standards affording journal bearings for shafts "which
 "are armed at their fore ends by rotating cutters of form adapted
 "to excavate the compound receding mortises." Each cutter

head consists of a truncated cone, united by a cylindrical neck to the shaft; its sides equal "the depth desired for the flaring tenon, " and agree in their obliquity with its flare." The end of the cutter is furnished with a bit nearly radial, which scoops out the bottom of the mortise, and with a bit placed somewhat spirally, which carves out the bevil sides. The neck is provided with a bit, which serves "to shape the parallel edges of the mortise "entrance;" 3, pulleys on the shafts; 4, a shifting frame acted on by a vibrating handle whose lower ends are pivoted to the bench; 5, suitably placed slots, pins, and stops; 6, clamping bolts; 7, a tongue affixed to the bench to prevent "any jarring or jumping "upward of the frame;" 8, slots on the frame "to elevate the post "out of the way of the tongue;" and, 9, standards serving as a rest for the face of the post, and carrying arms and notched clamps to hold the post fast in position.

[Printed, 10d. Drawing. See Repertory of Arts, vol. 18 (*enlarged series*), p. 356; Mechanics' Magazine, vol. 55, p. 818.]

A.D. 1851, September 10.—N^o 13,742.

BLAIR, JOHN.—"Improvements in beds or couches and other "articles of furniture." The bed described is a portable one. Each side of the frame is composed of two pieces of angle-iron of equal length jointed by a rule joint, and each end is connected to a cross piece by a slot and button. This rectangular frame is supported by four pairs of diagonal legs, the upper end of one leg being joint-riveted "to the inside of the vertical flanges of "the framing," that of the opposite one being adjusted by a pin and slot. The laths, which the patentee prefers to make of gutta percha, are joined to the framing by hooks; if sacking is used the hooks are sewn to the under side thereof, and engage "with the "under side of the external vertical flanges of the framing." If curtains are required, vertical rods are screwed or stepped into the upper flanges, one at each end, and cross rods with eyelet holes are passed over their tops. The vertical rods also support a tent cover, if such is required. A piece of sacking, sewn across the ends of the main part and drawn upwards by a cord suspended from the curtain rods, serves as a head and foot board. Modifications are described of the method of joining the diagonal legs together and to the framing, of connecting the side and end frames, and of jointing the two pieces which form a side. "The "general features," adds the patentee, "of my improvements are

“ applicable in the construction of various other articles of furniture, as tables and chairs.”

[Printed, 1s. 4d. Drawings. See *Mechanics' Magazine*, vol. 56, p. 257; *Practical Mechanics' Journal*, vol. 5, p. 7.]

A.D. 1851, November 22.—N° 13,828.

GEITHNER, FREDERICK BENJAMIN. — “ Improvements in the manufacture of castors and legs of furniture.” The rollers of the castors are made of china or earthenware; they are moulded, shaped, and turned in the ordinary manner, or by what is termed the “dry process;” or they may be made partly of china and partly of metal, the china being introduced at the sides in the shape of discs. The legs of furniture to which the castors are to be connected are also made of china or earthenware; they are hollow, moulded or shaped to the desired forms, turned when the pattern will admit, and finished and glazed in the usual way. The hollow of the leg receives the stem of the castor through it. A collar is fixed on the stem where it enters the bottom of the leg, and a nut and washers secure it at the top. The upper part of the stem is formed with a screw, which serves to fasten the leg to the piece of furniture.

[Printed, 6d. Drawing. See *Repertory of Arts*, vol. 20 (*enlarged series*) p. 32; *London Journal (Newton's)*, vol. 41 (*conjoined series*), p. 271; *Mechanics' Magazine*, vol. 56, p. 458.]

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A.D. 1852, October 1.—N° 7.

GARDNER, JOHN HENRY. — “ Improvements in toilet tables.” The pillar is hollow and forms a receptacle for “articles proper for furnishing a toilet-case.” The table top is composed of two hinged flaps, the under sides of which are fitted up for holding

various instruments and articles. In the pillar a stem slides having hinged to its upper end a looking glass, which when down covers the articles in the pillar. A set screw or spring catch retains the stem in any required position.

[Printed, 4d. No Drawings.]

A.D. 1852, October 1.—N° 15.

BARKER, JOSEPH.—“Improvements in fastenings” of bedsteads and other frames. In a bedstead the ends of the rails which are to be connected are so shaped that when put together they form a right angle; a half screw is affixed to each end; nuts, “formed or fixed in the ends of the uprights,” complete the fastenings. In other frames “the half screws are not absolutely affixed to the rails,” but to metal pieces which are fastened on to the rails; nuts bind them together as before.

[Printed, 6d. Drawing.]

A.D. 1852, October 1.—N° 24.

POOLE, MOSES.—(*A communication from Mr. Goodyear.*)—“Improvements in the making covers for and in binding books and portfolios, and in making frames for pictures and glasses.” In making frames (which is the part of the invention belonging to this series) sheets of vulcanized india-rubber are employed as veneers to cover the surface of wooden frames; or the sheets are moulded “solid to the design or the device desired;” and when “very sharp and well finished devices are desired the hardened material may be pressed, at a temperature of about 300° Fahrenheit, between dies.”

[Printed, 4d. No Drawings.]

A.D. 1852, October 1.—N° 36.

HARE, JAMES.—“Improvements in expanding tables and in music stools.” The table is expanded by means of a bar having a square head for a key and fixed to the table frame by a plate; this bar slides in a spindle provided at each end with a screw, one right, the other left-handed, which gear into racks on each side sliding in grooves. The music stool is raised and lowered as follows:—a spindle having a plate and screw at its upper end is screwed to the seat; on the spindle is a short screw which gears

into a long screw nut fixed in the pedestal; the spindle is "retained and guided in a vertical position" by collars at the ends of the nut.

[Printed, 8d. Drawings.]

A.D. 1852, October 1.—N° 62.

SAYERS, JOHN.—"Improved arrangements for maintaining a level surface or level surfaces upon or in connection with bodies subject to a rocking motion," as for instance tables and sideboards in ships. A series of shelves are placed above an ordinary table or sideboard and connected underneath with the following apparatus, so that the level of the shelves is always maintained:—two metal uprights are bolted or pinned to the under side of each shelf, one near each end; they pass through the table top on to a "sway beam" to which they are bolted or pinned; a third upright or "suspension cross" is pinned to the middle of the underside of each shelf and to the sway beam. The sway beams are united by rods to each other and to a weight which is supported in a frame. This arrangement "may be modified according to the peculiar circumstances of each case."

[Printed, 1s. 8d. Drawings.]

A.D. 1852, October 1.—N° 93.

LAWES, THOMAS.—"An improved quilt or coverlid," which "may readily be taken to pieces," or emptied of its contents for the purpose of washing or cleaning. Two sheets of "a fabric, more or less ornamental," are quilted or stitched together in rows "running the whole length of the coverlid parallel to each other," and between the rows are introduced "strippings taken from the most downy parts of feathers, free from stalks and stems." Or separate bags of calico or other suitable substance are filled with strippings (a method preferred by the patentee) and inserted between the rows. "The ends of the said rows of bags are left open for that purpose and after filling closed by sewing in the usual manner."

[Printed, 6d. Drawing and Woodcut.]

A.D. 1852, October 2.—N° 156.

BROWN, JOSEPH.—"Improvements in beds, sofas, chairs, and other articles of furniture, to render them more suitable for travelling and other purposes," especially "when used aboard

"ship." A frame is hung on centres or pivots, one being "attached to the back and to the cabin or wall," the other to a post or pillar in front of the bedstead; on these it swings from end to end. Two pivots secure the bedstead to the frame, enabling it to swing from side to side. India-rubber or other elastic springs are "attached from the side of the cabin or other fixed point to the frame." A stay iron passes from the first mentioned pivots beneath the bedstead. By altering some of these arrangements the bedstead may be made to swing on three or two centres only. The invention may be readily adapted to sofas and the like, also to "swing cots." Chairs are constructed as follows:—Standards are fixed to a framing by hanging them on centres "connected together by a rod passing through the lower part of the framing of the chair proper." The chair is hung in the standards on pivots which enter the arms above the seat. Springs in front and back "prevent the chair having too much play;" the action of the springs is adjusted by a pendulum at the back of the chair, hung on an upright attached to the framing, and having two arms connected to the standards.

[Printed, 1s. Drawings.]

A.D. 1852, October 2.—N^o 163.

POOLE, MOSES.—(*A communication from Mr. Goodyear.*)—"Improvements in the manufacture of tables, sofas, bedsteads, stands, chairs, and other articles of furniture, and the frames and bodies of musical instruments." In the manufacture of these articles the patentee employs "a hard substance produced by subjecting compositions of india-rubber and sulphur, with or without other materials, to a high degree of heat," after being combined by masticating or kneading. The other materials are gum shellac, gutta percha, coal tar, tar or pitch deprived of water by heat, white lead, oxide of zinc, and other coloring matters. "Other matters containing sulphur or giving off like products of sulphur when heated," may be substituted for sulphur. When the furniture is made of iron, the sheets of composition are used "before being heated." The articles, either in parts or in whole, "are wound and covered over in like manner to gun barrels;" they are then heated "in contact with impalpable talc or soapstone, and not in moulds." Many articles and many parts of articles are made wholly of the compound, being made hollow or partly hollow and filled in with

wood or strengthened in the interior with braces of iron. If the furniture is of wood, sheets of veneer made of the compound and coated on the under side with fibre or fabric are first heated and afterwards applied in the same way as veneers of wood.

[Printed, 4d. No Drawings.]

A.D. 1852, October 5.—N° 246.

COTTAM, GEORGE HALLEN.—“Improvements in chairs, sofas, “and bedsteads.” Three inner frames are so combined and arranged that they fold up and form at one time a chair or sofa, at another time a bedstead. The sides of the outer frame and back are fixed together by bars, and a rod riveted to the front legs keeps the sides in position. Two bars form the foundation for the seat. The inner frames are united by pin joints, and constitute in the chair the seat and back. The arms are pinned to the back frame and to the uprights (which are pinned to the outer frame). Two pieces, serving as front legs in the bed, are pinned to the back frame and joined together by a rod. Both seat and back frames are strengthened by cross bars “on which are fixed “the lathing bars.” The mattress or squab is made in three divisions. In one modification the parts of the outer frame constituting the back and legs of the chair, instead of being in one piece, are jointed in a particular manner, to which the patentee does not lay any claim. In a second the inner frames “are “stuffed on both sides instead of having a moveable and separate mattress or squab.”

[Printed, 1s. Drawings.]

A.D. 1852, October 8.—N° 303.

TILLET, GEORGE. — (*Provisional protection only.*) — “Improvements in bedsteads.” The patentee claims the invention of peculiar “side or other rails or frames,” and T-shaped sacking laths for metallic bedsteads; “the formation of the “corners of wood with metallic casings;” and the application of metallic laths to wooden bedsteads.

[Printed, 6d. Drawing.]

A.D. 1852, October 12.—N° 349.

WHARTON, EMANUEL. — (*Provisional protection only.*) — “Improvements in metallic bedsteads.” A piece of malle-

able or cast iron is secured on the end of each rail; "the two being brought together form a mitre or abutment on the angle of each joint." A slot is cut in the tubular pillar, and a nick in each piece, "the same width as the thickness of metal in the tube;" the piece is then inserted into the slot. In another sort of joint the rails "are placed with their thin edges uppermost, so that the flat part of the angle iron rests upon a collar" formed on the post. Holes are drilled through the rails, the end of the lower part of the post is passed through, and the upper part is screwed down upon them. If the post is in one piece, a screw nut holds the rails securely. Diagonal rods are employed "for the purpose of maintaining the form of the bedstead." Slight modifications are described in the Provisional Specification.

[Printed, 1s. Drawings.]

A.D. 1852, October 19.—N° 438.

HARCOURT, JOSEPH, and HARCOURT, WILLIAM.—(*Provisional protection only.*)—"The application of porcelain, glass, "or earthenware to articles in which or for which those materials have never heretofore been used," namely, to brackets and ornaments for window rods, Venetian blind turns, wheels for pulleys, sash rollers, parts of metallic bedsteads and gas fittings, knobs and handles, studs and buttons, parts of castor sockets, and whipstick, parasol and umbrella mounts.

[Printed, 4d. No Drawings.]

A.D. 1852, October 23.—N° 553.

BIELEFELD, CHARLES FREDERICK.—"Improvements in "billiard and bagatelle tables," by forming the surface of the bed of papier maché or a similar plastic composition. The bed is strengthened by "transverse bars and also diagonal frames." Thereon are fixed "narrow battens, leaving a slight opening "between each neighbouring pair." A sheet of papier maché, manufactured as described in the Specification of a Patent granted to the patentee on February 24th, 1851, is screwed at intervals on to the battens, the under surface of the papier maché having been previously planed and coated with white lead, and a coating of the same laid on the battens. The upper surface of the papier maché is then planed, and the table is finished in the usual way.

Iron may be used for the framing and bed. The bed and the papier maché may be made in several pieces.

[Printed, 4d. No Drawings.]

A.D. 1852, October 30.—N° 578.

KIRBY, EDMUND ADOLPHUS.—"An improved adjusting couch for medical, surgical, and general purposes." This couch forms a sofa, bedstead, or easy chair. Within the outer framing is a moveable frame upon which the mattress or squab is placed; this is made in four parts jointed together and called the head, body, thigh, and leg parts. At the joint of the body and thigh parts a rod is fastened to the framing, "so that either end may freely move up and down." To the framing are secured a head piece and a foot rest, the latter being readily removeable. The side rails fit into sockets, and, when the position of the couch is changed, they can be removed to other sockets. In each is a groove to receive the sides of the foot rest when it is wished to form a table across the couch. Below the framing are two pairs of brackets supporting square-headed shafts and gearing for two curved racks by means of which the body and thigh parts are raised and lowered. The racks are screwed to cross pieces, and the back of the "body" rack works against a friction roller. The head part is adjusted by means of a spring and rack. Beneath the lower end of the leg part is jointed a lever having notches cut on its lower edge. Upon the racks are studs, and the lever is attached to either of these by the notches.

[Printed, 10d. Drawings.]

A.D. 1852, November 19.—N° 789.

TEWKSBURY, GEORGE PERRY.—"An improved life-preserving seat," composed of two pieces of wood or other material (the upper forming the seat, the lower the base) and "an air-tight hollow vessel formed of two conic frustra," made of thin sheet metal and having its ends sunk into the two pieces. On each side of the vessel is a "holding or grasping" rod having an end fixed into each piece. This "life-preserving seat" can be applied to a chair below the seat and between the legs. The chair seat, having an air-tight vessel affixed to its under side, is hinged to the frame so as to be capable of turning up against the back.

[Printed, 6d. Drawing.]

A.D. 1852, November 30.—N° 922.

BRAE, ANDREW EDMUND.—“An apparatus for stopping and “detaining, or releasing and setting free cords, tapes, chains, “ropes, or other flexible lines or strings.” The more immediate purpose to which the invention is applied is “the detention and “release of the cords” of Venetian and other blinds, curtains, maps, &c. The apparatus consists of “two equal and similar “segments of excentric sheaves or rollers,” inclosed in a box or casing; their edges are either plain or corrugated or covered with some substance to increase their frictional power. The segments revolve freely on pivots; they are so adjusted that their edges are opposed to each other at such distance that, when their longer radii coincide, the edges are in contact or nearly so; but when the shorter radii coincide, there is an opening between the edges more than sufficient to admit of the free passage of the cords between them. To one or both segments is affixed “a counter-“acting or releasing back pull or action;” they are connected “either by sliding parallel bars or by affixing to each segment “cogged teeth duly centered, so that the teeth of one segment “shall work between and within those of the other.” To one or both are applied springs or weights, which impel them “to that “position in which their longer radii coincide.”

[Printed, 4d. No Drawings.]

A.D. 1852, December 15.—N° 1061.

D'HOMME, PHILIPPE.—(*A communication.*)—“Certain improve-“ments in the manufacture of window blinds, curtains, and hang-“ings.” The blinds, &c. are printed in oil colours upon a suitable fabric by means of zinc plates prepared in a particular manner, and employed in a press which is “furnished with pointing appa-“ratus or other means of causing the different colours applied by “the different plates to be printed in their proper places.” The plate is cut to the required size, filed with a coarse file, hammered flat, and washed with spirits of wine or alcohol. The design is transferred to the plate “with an ink composed of equal parts of “lamp black, gum, and varnish, ground up together.” After the transfer the plate is powdered with black lead or red chalk; a sponge moistened with water is then passed over it. The design is fixed by passing over it the following preparation:—6 parts by weight of nut galls boiled in 100 parts of water until reduced to

60 parts; when cold there is added 10 parts of saturated aqueous solution of gum tragacanth, 10 of nitric acid, 15 of saturated aqueous solution of alum, and 5 of hydrochloric acid. The plate is inked and an impression is taken. Before taking a second the plate is "washed over with a mixture of tragacanth gum water " with one-seventieth part of its weight of the acidulated preparation," and allowed to dry. The temperature of this mixture is to be "kept down to that of the freezing point of water." The impression is taken dry. "Several plates are employed for printing the several colours, which are caused to fall into their proper " places by means of the system of pointing apparatus attached " to the press." To give greater transparency to the cloth it is prepared before the printing with a solution of gum tragacanth. After the printing "the cloth is covered with a thin coat of a " solution of caoutchouc in turpentine, on the opposite side to " that which has received the impression." The patentee describes the press which he uses, but does not claim the invention thereof.

[Printed, &c. Drawing.]

A.D. 1852, December 20.—N° 1112.

FONTAINEMOREAU, PETER ARMAND LE COMTE DE.—
(*A communication.*)—(*Provisional protection only.*)—"An improved " mode of constructing night stools and utensils, water closets, " urinaries, and other recipients of fecal matters; also applicable " to apparatus for containing fluids liable to or in a state of decomposition." The upper is part closed with a lid or cover of a deep hollow form, "made to fit closely upon the ridges by means " of a band of any soft or elastic material." The middle part of the cover "is a pierced prolongation dipping into a cup or basin " adapted to the bottom of the cover.

[Printed, &c. Drawing.]

A.D. 1852, December 23.—N° 1141.

HOBSON, ALFRED JOHN.—"A new or improved metallic bedstead." The novelty claimed in this invention is that "the " head, foot, and side rails are held together by the force or pressure which effects the tightening of the sacking." The rails are joined to the posts by pieces riveted to the former entering corresponding holes in the latter; or "the junction may be effected by

"the ordinary dovetail joint." The legs are screwed on. The laths, "which are parallel to the sides," are fastened at one end to the foot rail, and at the other to a bar kept parallel to the head rail by guides. Pins with screwed heads are fixed to the head rail; they pass through the guides and bar; and nuts, working on the pin heads, bear against the bar and press it towards the head rail.

[Printed, 6d. Drawing.]

A.D. 1852, December 23.—N° 1145.

WESTLEY, WILLIAM, and BAYLISS, RICHARD.—"An improved fastener, applicable to the fastening of window sashes, tables, and other similar purposes." Each of the two parts composing this fastener "consists of two plates joined together, and situated in planes at right angles to one another." One part is screwed or otherwise fastened to the meeting bar of each sash; and the inner face of the vertical side of each part is inclined, so that, when the window is shut, the two inclined faces "engage against one another, and draw the sashes together;" a tongue, jointed to the part on the lower sash and actuated by a spring is forced thereby under the edge of the plate on the upper sash, and the lower sash cannot be raised until the tongue is disengaged by pulling it forward; for this purpose it is provided with a thumb plate. A bolt, having an inclined edge and actuated by a spring, may be substituted for the tongue. This fastener is applicable to such tables "as have tops supported by being jointed to a pillar, and capable, when not in use, of being raised into a vertical plane." One part is fixed to the table top, and the other to "the block to which the said top is fastened;" the inclined or wedge-shaped surfaces engage and secure the top firmly in its place, whilst the spring bolt fixes the two parts of the fastener.

[Printed, 8d. Drawings.]

A.D. 1852, December 29.—N° 1192.

BROWN, ARCHIBALD DOUGLAS.—"Improvements in the construction of portable articles of furniture;" they are so constructed that they may be readily taken to pieces and packed up. In chairs, stools, wash stands, toilet tables, &c., metallic wedge or dovetail joints, or conical sockets and pins, are employed at the "junction ends of the seat, frame, and tops of the legs,

" the socket being on one piece, and the corresponding projection " on the other." If arms are to be put on chairs, " precisely the " same system is pursued." In fastening a table top on to its pedestal, the latter has " one or more sunk dovetail wedge pieces," and the former has on its under side corresponding projections. To attach the legs the base of the pedestal " is surrounded with " projecting dovetails," answering to sunk pieces " on the upper " inner face ends of the legs."

[Printed, 6d. Drawing.]

1853.

A.D. 1853, January 6.—N° 34.

SAVAGE, ROBERT WATSON.—(*Provisional protection only.*)—" An alarum bedstead." A clock, having an alarum dial plate, is connected with the legs " by a connecting rod from a catch of a " lever " at the head of the bedstead. The legs are so arranged that, when the alarum goes off, they are drawn from under the bedstead, thereby waking the person in bed " without inconvenience, but with certainty, ease, and comfort."

[Printed, 4d. No Drawings.]

A.D. 1853, January 10.—N° 67.

SCHNEIDER, FREDERICK.—" A chair to be employed for preventing sea-sickness." A horizontal shaft turns on journals fixed on two uprights; the shaft carries a journal on which the base of triangular supports works. Two chairs are attached at top to the supports, and at their lower part to a cross piece. A weight is suspended by a rod which passes through the shaft, cross piece, and base of the supports. " The chairs are furnished " with moveable footstands, so as to be lengthened or shortened at " will by means of toothed apparatus." Hooks are fastened to the shaft for hanging extra weights thereto. The chair may be suspended from above:—a semicircular piece of iron has fixed pinions at each end, working in bearings in a curved forked rod to which the chair is attached, " so as to be raised or lowered to suit the " height of the person sitting in it." The berths of vessels may be supplied with reclining couches " on these principles of equi-

"brium;" in a bearing fixed in one of the side bars of the cabin a shaft works connected with a frame, "which rises and falls according to the longitudinal motion of the vessel," the shaft serving as a pivot on which the frame turns. Within the frame is another frame containing the couch; this frame swings on pivots at the head and foot of the outer one; the motions are regulated by a weight hung by a rod on the extremity of the shaft. At a suitable point of the rod is a horizontal rod communicating with the bottom of the inner frame "and giving it a lateral motion." A lever is connected with, and operates upon the outer frame by means of a rod; the lever is notched and carries a weight "to balance the weight of the bed."

[Printed, 8d. Drawings.]

A.D. 1853, January 14.—N^o 101.

STEADS, WILLIAM.—"Improvements in blinds, maps, charts, and other articles wound on rollers," so that the blind, &c. shall be in equilibrium with the weighted cord on the pulley of the roller." A weight or balance equal to that of the blind is attached to a cord, which is fastened to a pulley on the roller axis. At the bottom of the "boxed bracket," which prevents the cord from getting over the pulley, is a slot for the passage of the cord, and also a collet or small pulley to keep the blind "on an equilibrium with the weight of the balance."

[Printed, 6d. Drawing.]

A.D. 1853, January 21.—N^o 157.

PRINCE, ALEXANDER.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in the manufacture of articles of furniture, and other articles of a useful and ornamental character, by the use and application of a certain vegetable production belonging to the family of the cactus plant, and in the mode of treating and preparing such vegetable production, so as to render it available for the above purposes." The production referred to is "oppuntia," and the mode of preparing it is thus described:—"The detached leaves of the tree and of the trunk or stem are scraped with a knife or other suitable instrument so as to remove the outer surface or scarf skin and all asperities therefrom; they are then boiled in water for about one hour in order to soften or destroy the azotic matter or substances contained in

" the wood, after which they are washed or rinsed, and the remaining superfluous substances or matter may be removed by a brush. The body of the leaf now remains naturally festooned and perforated, presenting an appearance somewhat similar to lacework, which when dry is firm and solid and is now ready for use." In some instances it may be necessary to strengthen the lacework with iron or brass wire or with pieces of plain or carved wood. If the leaves " have undergone a natural change while growing, by the action of the air and rain thereon, so as to produce the same appearance as the process of boiling," they may be used in that state, but they will not be found so strong or durable as when treated in the manner above described.

[Printed, 4d. No Drawings.]

A.D. 1853, January 29.—N° 241.

LAVANCHY, JEAN BAPTISTE.—" Improvements in the construction of collapsable framework of wood or iron, which may be employed for forming portable bedsteads, houses, parts of houses, or bridges, and other similar structures, which may occasionally be required to be removed from place to place with facility, economy, and despatch." This invention relates to the application of the series of levers called lazy tongs to the various purposes mentioned in the title; and the especial novelty claimed is the applying studs or pins to the ends of the levers " to act as stops, to render the framework more rigid;" also the use of " grooved or slotted bars, to which the levers are connected or jointed, and in the slots or grooves of which certain of the joint pins of the levers are made to work." In constructing a bedstead some of the levers are jointed to the posts, and, when the frame is extended, a side rail serves to steady it. The patentee describes his construction of " a moveable expanding shield, for protecting soldiers from musquetry," of a portable house, and of a portable bridge.

[Printed, 10d. Drawings.]

A.D. 1853, February 1.—N° 269.

EDWARDS, ELIEZER.—" A new or improved bedstead, which may be used as a vehicle." A wheel (or pair of wheels) is attached near the head of the frame underneath the sacking laths; the upper or head portion and the legs are jointed to the

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frame, so that they may be turned up and out of the way when the article is used as a vehicle; and the foot portion below the legs is made in the shape of handles or shafts. The head portion may be provided with arched rods for a canopy.

[Printed, *ed.* Drawing.]

A.D. 1853, February 4.—N^o 302.

BROWN, WILLIAM.—“An improvement or improvements in “the construction of metallic bedsteads,” that is to say, a method of connecting the angle iron of the rails to the corner blocks of the posts. In two adjacent sides of each block are cut a taper groove (extending nearly to the bottom) and a cavity. The end of the vertical side of the angle iron is turned at right angles to fit the groove, and a portion of the horizontal side is turned down to form a projection which fills the cavity. The projection may be made by cutting a piece from the horizontal side. When great strength is required, the fitting portions are shaped “of a cylindrical or slightly conical form.”

[Printed, *ed.* Drawing.]

A.D. 1853, February 12.—N^o 372.

PERRY, THOMAS JAMES.—(*Provisional protection only.*)—“A “new or improved method of constructing cornice poles, and “picture and curtain rods, and other rods from which articles are “suspended.” The pole is a slotted tube in which a rod is suspended at its ends and if necessary at its middle; rings are placed on the rod, and hanging from each ring (or attached to it) is a link one end of which passes through the slot; hooks to which the curtains are fastened are hung to the links.

[Printed, *ed.* Woodcuts.]

A.D. 1853, February 14.—N^o 382.

FONTAINEMOREAU, PETER ARMAND, LE COMTE DE.—(*A communication.*)—“Improvements in the mode of giving flexibility to beds, sofas, seats, and other similar articles.” This invention consists in arranging a series of spiral springs “in the “shape of two united truncated cones,” or cylindrical springs, to form a mattress or squab. Two frames are employed, the inner one being moveable. The springs are hooked at their lower ends to the outer frame. Connected by eyescrews to the

inner frame are rods to which are fastened straps joining the springs at top. Round or flat iron rods are screwed or riveted to the inner frame, "serving to support it throughout its breadth;" bolts screwed to the same keep it steady; and pieces of leather glued to both frames prevent any noise. If the springs are cylindrical, they require a somewhat different fixing, which is described in the Specification. Slight modifications also of the above arrangement are given. "A double superposed elastic "mattress" is constructed with three frames and two sets of springs; those of the lower row are hooked to the bottom frame and united to the middle one by means of sockets; those of the upper row are hooked to the middle frame and joined to the top one. In an article capable of forming either a bed or sofa, the spring mattress is made in two portions hinged together, so that one may be turned up for a sofa back. "The supports of the "head and feet" also bend in two parts by means of bolts. Feet are hinged to the supports; and in the frame is a drawer for the furniture.

[Printed, 1s. Drawings.]

A.D. 1853, March 3.—N^o 534.

BILLING, MARTIN.—(*Provisional protection only.*)—"Certain "improvements in metallic bedsteads." The side and end rails are hollow and slotted, and the sacking or spring mattress is secured thereto by means of rods or bars."

[Printed, 6d. Drawing.]

A.D. 1853, March 4.—N^o 552.

BOYDELL, JAMES.—"Improvements in the construction of "bedsteads." The side rails are "formed of metal of a trough-like shape;" laths of wood with the sacking are let into the troughs, which are then closed up. The four rails are supported on frames composed of trough-shaped bars having laths enclosed therein; the bars cross each other and are joined to the rails by pins; they are kept distended by stretchers pinned at top to the upper portions, while notches catch into studs on the lower portions. Rods form the head and foot posts; they are provided with holes through which sacking may be laced; they are pinned and buttoned to the corners of the rails and "are spread out and "have holes formed through them" to receive the lower ex-

termities of the bars. The side rails are sometimes made in two parts for greater convenience of packing; the upper ends of the bars must then be formed to receive two pins instead of one.

[Printed, 6d. Drawing.]

A.D. 1853, March 7.—N° 576.

CHATWIN, THOMAS TURNER, and MCLEISH, ROBERT.—(*Provisional protection only.*)—"Improvements in rollers, rods, " or poles, for window blinds, curtains, maps, and such like " purposes." A sliding tube is affixed at one or both ends of the pole, " so as to shorten or lengthen it, according to the di- " mension of the map, curtain, or window for which it is " required." The tube is regulated and worked by a spring or any elastic substance.

[Printed, 4d. No Drawings.]

A.D. 1853, March 8.—N° 579.

PERRY, THOMAS JAMES.—"A new or improved method of " constructing cornice poles, and picture and curtain rods, and " other rods from which articles are suspended." A slotted tube, rod, rings, links, and hooks, are employed, as stated in Specification 372. A helical spring is now added, one end bearing against a block which slides on the rod, the other against the closed end of the tube. A cord attached to the block passes over a pulley at the end of the tube opposite the block. For double curtains two blocks are required placed on the middle of the rod, two helical springs, and two cords. The springs, cords, and pulleys may be omitted, and the curtains be drawn by hand. Again the rod and rings may be dispensed with, the links being hung on the coils of the springs. For picture hanging the outer tube, inner rod, and rings only are necessary.

[Printed, 8d. Drawings.]

A.D. 1853, March 8.—N° 585.

WRIGHT, JOHN.—"Improvements in the construction of bed- "steads, and other frames." The rails are made with inclined ends and have a semicircular groove in the upper and under sides, and a semicircular opening for the passage of a screw. The posts are made in two parts, each mortised for a nut, and each having

formed thereon a projection corresponding with the grooves. The rails and posts are drawn tight together by means of a screw. Separate rings with projections on them may be used. The projections and grooves are taper or wedge-shaped in order to draw the parts more tightly together.

[Printed, 8d. Drawing.]

A.D. 1853, March 9.—N° 604.

HOLSKAMP, WILLIAM AUGUST.—(*Provisional protection only.*)—"An improved castor for legs of furniture and other purposes." The castor consists of a sphere or ball partly surrounded by a circular metallic frame, in which are secured "five elongated wheels or rollers;" these are placed in the form of a pentagon and rest on the crown of the sphere. When the sphere is moved, three of the wheels, forming a triangle, "are simultaneously and directly acted on by the sphere and revolve with it, while the other two wheels remain neuter, but do not in the slightest degree impede the free action of the sphere." By this arrangement "an equal pressure upon the sphere is at all times maintained, while at the same time it is enabled to revolve freely in every direction. The whole are enclosed in a case formed in two parts, which screw together near the centre, having an aperture at the bottom to allow about one-fifth of the sphere to protrude." The castor can be affixed to furniture in the ordinary manner; or "the metallic frame with the wheels and sphere alone" can be inserted and "secured by means of a metal plate with an aperture for the sphere to protrude," thereby rendering the case unnecessary.

[Printed, 4d. No Drawings.]

A.D. 1853, March 14.—N° 635.

O'LEARY, JOHN.—(*Provisional protection only.*)—"Improvements in chests for the use of emigrants, whereby they are also made applicable to other purposes." This chest is convertible into either a wheelbarrow or a bedstead. The top and one of the ends are moveable; and an angular piece is cut out of the lower edge of the opposite end, sufficiently long to allow a wheel to work through or partially through it. To this aperture there is a cover so constructed that "by reversing it and placing it in the inside, it will act as a guard over the wheel." A pair of move-

able feet and handles and suitable axle and bearings for the wheel are provided. The lid and end, being laid upon the handles, "form a stage to extend the bottom of the machine," so as to obtain sufficient length for a bed. An awning of canvas or other material "supported upon a few light nibs or standards" extends over the whole.

[Printed, 4d. No Drawings.]

A.D. 1853, March 14.—N° 637.

JOHNSON, JOHN HENRY. — (*Provisional protection only.*)—
"Improvements in the application of porcelain and similar materials to ornamenting purposes," namely, to the manufacture of stands upon which to display goods, of door and window cases, shop fronts, curtain rods and rings, &c. The substance or ground work of these articles is iron, wood, or plastic materials, and they are to receive "a coating of porcelain, opal, enamel, or similar materials." Or "crystal, glass, pipeclay, free stone plain or ornamental, either its natural colour or painted or varnished, alabaster, stearine, mother of pearl, ivory, shell, solid varnishes, or other hard and light substances capable of resisting the destructive action of air and gas may be employed with equal success."

[Printed, 4d. No Drawings.]

A.D. 1853, March 15.—N° 642.

MORGAN, WILLIAM.—"The manufacture of a portable double action folding chair." The seat frame is hinged to the back so as to fold down and rest upon the back legs; the front part also is hinged so as to fold up "on the outside of the back legs in a parallel line to them." The chair when arranged for use is fastened at the seat by two tension rods fitted into the back rail and passing through the seat frame into two nuts; the rods are screwed up by a key, the screw holes being hidden by a slip rail. In elbow chairs the elbows are fastened on by thumbscrews which pass through the back and through the side rails.

[Printed, 10d. Drawings.]

A.D. 1853, March 18.—N° 674.

CHRISTIAN, ROBERT OATES.—(*Provisional protection only.*)—
"Improvements in bed hangers for ships carrying emigrant."

"passengers, and in the manner of manufacturing them." The object of this invention is to arrange the beds so as "to give greater accommodation" and to allow "the whole apparatus being removed when the space is required for other purposes." The beds are suspended "by means of iron rods hung from the deck timbers by means of hooks;" these rods "carry one end of a horizontal bar of iron in the form of an inverted T, the other end of which bar drops into an eye screwed into the ship's side;" the rails "which form the surface for the bedding" rest on these inverted irons. There are also tie rods so arranged as to prevent the beds from swinging.

[Printed, 4d. No Drawings.]

A.D. 1853, April 1.—No 777.

BRITAIN, BARTHOLOMEW.—(*Provisional protection only.*)—

"Improvements in the means of supporting or retaining bedsteads or other articles of furniture in their proper positions." Wedge-shaped tenons are cut on the ends of the rails, and metal bearings or mortises are fixed on the uprights.

[Printed, 4d. No Drawings.]

A.D. 1853, April 4.—No 794.

FINDLOW, JAMES.—"Improvements in beds or couches for sick persons," which are so constructed "that a portion or portions thereof may be moved from beneath the patient," and that the head part may be raised. To effect the former the framework is made with an orifice surrounded by a flanged metal casing, a similar orifice being formed through the bed or mattress. Secured to the under side of the bedstead is a bracket having fixed to it a vertical rod whereon is mounted an arm capable of sliding up and down. Attached to the arm is a weighted cord which passes over two pulleys. On the outward end of the arm is placed a table corresponding in shape to the orifice. A rod on the bracket acts as a stop and regulates "the turning back" of the arm. To carry out the latter improvement the head part of the bedstead is moveable and turns on centres; to this part quadrants are fixed, their lower end being connected to cords which after passing over guide pulleys are fastened to a shaft. On one end of the shaft is a ratchet wheel provided with catch and winch handle.

[Printed, 6d. Drawing.]

A.D. 1853, April 12.—N^o 882.

CUNNINGTON, ELIZA.—“Improvements in the decoration of “furniture, panels, and other surfaces,” especially table tops, fire screens, and work boxes. This invention “refers to a mode of “decorating articles of various kinds, and also parts of buildings, “by the employment therefor of certain natural productions,” which, when properly prepared, are to be covered with glass, talc, “or other translucent material.” Those are preferred “which “possess a filamentous character, as mosses, ferns, or other “cryptogamous plants, grasses, and such like vegetable matters,” such as, when pressed and dried, “present to the eye an inappreciable thickness,” and consequently “a closer imitation of “inlaid work.” They are spread out on sheets of paper or other suitable substance, with the leaves, stems, &c. so arranged that “after being submitted to pressure they will present a graceful “and artistic appearance;” when pressed and dried they are colored or dyed or coated with gold or silver leaf or other metallic tissue. Afterwards they are arranged either in groups or in the form of wreaths or borders, or as taste may dictate, “introducing “for the sake of variety flowers and leaves of plants similarly “treated with color or with a metallic coating, over the decoration thus produced.” A plate of glass or talc, or a sheet of pure gelatine or other analogous substance, is then applied, and if thought desirable, “border lines or other devices” are painted or otherwise produced upon the under surface of the covering. In some cases the patentee proposes to employ “the finer portion of “feathers, after being bleached or colored or coated with some “metallic tissue,” and to arrange them either alone or in combination with the above to form ornamental devices “after the manner “and having the appearance of inlaying.” Sometimes silvered glass is used “as the ground whereby a reflection of the under “side of the plants will be obtained.”

[Printed, 4d. No Drawings.]

A.D. 1853, April 14.—N^o 909.

WYBURN, ROBERT.—“Improvements in the construction of “easy chairs.” The side rails are continued to form the hind legs; the front legs are hinged to the front of the frame; and the arms are fixed to the side rails. The seat “consists of a frame “crossed with wooden strips.” The back is a separate piece

moving on thumbscrews which pass through the side rails; its inclination is varied by straps fastened to it and passing over the arms under stuffed pads to hooks or buttons. To the front rail is hinged a leg rest supported by folding legs; this rest can be fastened back under the seat, or it can be made to slide in grooves under the seat and have an india-rubber spring tending to draw it back when released by a catch. The stuffing is made separately and is fastened to the chair by straps. A reading or other table is attached by pins or buttons which enter slotted openings in a plate fixed to the side of one of the arms.

[Printed, 6d. Drawing.]

A.D. 1853, April 15.—No 919.

LEWTHWAITE, JOHN.—“Improvements in rollers or mountings for blinds, maps, and other like articles.” The roller is grooved throughout its length; the blind mounted on a rod is placed in the groove and secured on the left hand by a moveable collar and ring and by the pressure of the bent end of a projecting pin, and on the right hand by a fixed collar. This collar carries a disc having cast or fitted round its middle a cylinder from which projects a rod; around this is a coiled spring “which is capable of being compressed within the length of the cylinder.” A hollow cap with a bearing on it is passed over the rod, “brought up close against the end of the cylinder,” and secured by riveting down the end of the rod over a washer at the end of the bearing, or by other means. The cord is wound round the cylinder and descends through an opening in the cap. The collar may be made with an additional flange to prevent the cord from rubbing against the cap.

[Printed, 8d. Drawing.]

A.D. 1853, April 19.—No 947.

VIVIAN, EDWARD.—(*Provisional protection only.*)—“Improvements in cases for containing hats in churches and similar situations.” Hassocks are made “in the form of a box with a lid.” The box serves to contain a hat, and the lid is covered with a cushion for kneeling upon. The lid is extended, or the upper portion of the sides of the box are “expanded outwards, to suit the contour of the rim of the hat and afford space at the lower part of each box of a series for the insertion of the feet whilst sitting.”

[Printed, 4d. No Drawings.]

A.D. 1853, April 26.—N^o 1003.

SCOTT, URIAH.—“Improvements in the manufacture of tubular rods and rings for furniture;” namely, by filling them with sand, sawdust, or other powder, or granular matter, or even water,” for the purpose of deadening the sound.

[Printed, 4d. No Drawings.]

A.D. 1853, May 10.—N^o 1148.

TILLET, GEORGE.—“Improvements in the manufacture of metal bedsteads.” The pillars are tubular, each having two slots cut therein for the reception of a side and end rail; “in some cases the head and foot rails are fixed to the tubular pillars by being bent partly or wholly round them, and then soldered or otherwise fastened thereto.” Each side and end rail is notched in such a manner that after entering their respective slots they lock into each other. The laths are fixed to the rails by means of notches cut in the upper surface of the latter, “the larger parts of the notches being outward,” and corresponding ends on the former; the pattern of the notches and ends may be varied. The stretchers are turned down at their extremities and provided with screws for pressing out the side rails. Valance laths, having “filling pieces” at their ends to enter the slots in the pillars, are placed on the upper surface of the rails. The head and foot of the bedstead “may have a finished character given thereto” by employing corrugated or fluted metal, “so that when the same is painted or japanned it gives the appearance of fluted silk or fabric.”

[Printed, 10d. Drawings.]

A.D. 1853, May 23.—N^o 1264.

EVANS, EVAN.—(*Provisional protection only.*)—“An improvement or improvements in castors for furniture.”—The horns turn on a spindle or axis whose upper end bears against the under side of the castor socket. Three rollers, turning on axes which are carried by the spindle, bear against the sides of a chamber formed upon and underneath the socket. On the turning of the horns and spindle the rollers “cause the motion to be effected with great facility by diminishing the friction which would exist if the said rollers were not interposed between the moving

“ parts.” Owing to the ease with which the spindle turns, the centre of the castor wheel can be brought more immediately under the spindle than in the common castor.

[Printed, 6d. Drawing.]

A.D. 1853, May 30.—N° 1325.

BROWN, JOSEPH.—“The improvement of elastic spring beds “ mattresses, cushions, and all kinds of spring stuffing for upholstery work generally, making them lighter and more portable.” India-rubber straps or elastic webbing are substituted for the ordinary spiral springs. In bedsteads only one rail is required inside the frame; over this rail the straps are passed and secured; the straps may be interlaced and another set may be applied in a slanting direction at the head of an invalid bedstead. The mattress may be fastened to the straps; in sofas the straps are nailed to the framing. A pillow consists of a semicircular frame with webbing attached thereto. The invention can be applied to chair and carriage seats. “To the ends of the rising part” of a bedstead and to the ends of a hammock other straps may be attached for the purpose of suspension.

[Printed, 1s. Drawings.]

A.D. 1853, June 4.—N° 1377.

BETJEMANN, HENRY JOHN.—“Improvements in chairs,” giving them “the combined capabilities of reclining, rocking, and “ revolving.” The seat and arms are hinged to the back; the uprights of the arms move to and fro on the side rails; they descend partly through slots in the rails, and their movement is regulated by studs, racks, and a lever jointed to a handle. The chair frame is supported on the axis of a lower frame consisting of four legs, and on an intermediate “star plate” formed of four radial arms; the seat is united to the plate by means of four elliptical springs connected to the four rails by cranked or bent plates. “The rocking capability of the chair in a direction from “ front to back ” may be prevented by a stop or stops; (the action of one is described). Rods connect the chair back and a flap hinged to the front rail; the flap “is so formed that it can “ be raised without interfering with the leg rests;” these have “ hinged folding supports.” The rotation of the upper frame on its axis may be prevented by a stop or stops (also described); and

the chair "may be made with less extent of action by using only
" two springs, one at front and one at back."

[Printed, 10*d*. Drawings.]

A.D. 1853, June 6.—N° 1392.

BARKER, DELABERE.—(*Provisional protection only*).—"Im-
" provements in the manufacture of blinds, shades, and other
" screens from glass and other vitreous substances, also in the
" method or methods of raising, lowering, folding, and regulating
" such blinds, shades, and other screens." Short Venetian blinds
are made of slabs or prisms of glass or other vitreous substance;
they are fixed within a frame, wherein are inserted one or more
wheels at top and bottom "to allow of the free working backwards
" and forwards of the slabs:" sometimes washers are attached
to the upper or lower ends of both "to prevent their grating
" against each other." Long Venetian blinds are made of similar
substances; they are raised in the ordinary way by cogged,
ratchet, or other wheels. Fire and other screens are formed of
one sheet, or of slabs of glass; these are caused to revolve round
a pillar by means of a cord or chain.

[Printed, 4*d*. No Drawings.]

A.D. 1853, June 13.—N° 1431.

PERRY, THOMAS, JAMES.—"An improvement or improvements
" in raising and lowering Venetian and other blinds, applicable
" also to the raising and lowering of other bodies." The cord is
passed through a hole in the drum round which it is to be wound.
A crank is jointed to the drum; at the upper end of the crank is
a pin forced by a spring on the crank into one of the holes in a
plate on the drum. At the lower end of the crank is a knob, by
pressing which the pin is drawn out of its hole, and the crank is
free to be turned to wind or unwind the cord. The drum is
sometimes divided by a plate into two parts on which two cords
are coiled in opposite directions.

[Printed, 8*d*. Drawings.]

A.D. 1853, June 17.—N° 1480.

HOGG, JAMES, junior.—"Improvements in the application and
" combination of glass, porcelain, stoneware, earthenware, terra
" cotta, composition in plaster of the kind called scagliola, and ma-

“jolica ware.” The patentee applies the above named substances in the manufacture of certain parts of looking glasses, what-nots, ladies’ work tables, occasional tables, portfolio stands, tea-poys, drawers for insertion in cabinet work, boards of books, reading easels, centre mouldings for rooms and buildings, knobs of nails, and shades for horticultural and other purposes and stands for the same. He particularises the parts which he makes of the said substances, and in some instances his mode of manufacturing and inlaying. For the purpose of adding weight or otherwise giving greater solidity to some of the articles he loads various portions thereof internally with metal.

[Printed, 6d. No Drawings.]

A.D. 1853, June 20.—N^o 1512.

SKERTCHLY, JOSEPH, junior.—“Improvements in the application of baths to articles used for resting the human body.” The bath may be fixed to the framework of a bed or sofa, or loose and fitted into the space below the sacking or seat. If a shower bath is required, the pillars of the bedstead are made available for the conveyance of water by means of a force pump to the head part which supports the shower vessel. In a sofa a shower bath is applied “by means of rods or piping made to fold within the “bath,” or a loose rod or pipe affixed when required to support the shower vessel.

[Printed, 6d. Drawing.]

A.D. 1853, July 12.—N^o 1652.

FINNEMORE, JOSEPH BACON.—“Improvements in sofa “springs, useful for spring-stuffed upholstery work generally, “and in the adaptation thereof to mattresses.” The springs are made with loops formed on or attached to the top and bottom circles. The rails of the bedstead are united to angle pieces, placed under each corner, by clips or cases which keep both “true and in place.” The springs are secured in their intended positions upon the frame by straps which pass through the loops and round the rails. A thin mattress is placed over the framing, springs, and straps; it may have a valance projecting from its lower edge.

[Printed, 6d. Drawing.]

A.D. 1853, July 15.—N° 1695.

GOODYEAR, CHARLES. — "Improvements in the manufacture of beds, seats, and other hollow flexible articles to contain air." "Knit or looped fabrics" are employed in this invention. Two pieces waterproofed are cemented together at intervals. "Where it is desired that the cells or hollow spaces should come," two surfaces of paper are introduced; and at the parts where the fabrics are to be cemented together strips of tape are cemented between to separate the cells. The cells may all open into each other, or vulcanized tubing may be introduced and the air be supplied by a mouthpiece; or the cells of each row only may communicate and have a separate mouthpiece for each row.

[Printed, 4d. No Drawings.]

A.D. 1853, July 18.—N° 1710.

PERKES, SAMUEL. — "Improvements in the construction of portable metallic folding bedsteads, chair bedsteads, chairs, sofas, couches, settees, and such like articles for the use of emigrants and others, and part of which improvements are applicable to ordinary bedsteads, sofas, couches, chairs, and such like articles in general." This invention is an improvement on "Perkes's patent folding bedstead," which was "registered under the Registration of Designs Act," No. 2390. The two side rails are formed in several pieces connected "by a peculiar description of rule joints." The connecting or stretching bars have at each end a shoulder, screwed pin, and portable screwed nut, "or a cottar pin or other sliding portable connecting joint." The cross stay bars for joining the legs are constructed in two parts; each has in its middle a swell or boss, through which is fixed the joint, rivet, or screw. The sacking is put on by elastic or other looped rings and hooks; underneath it are attached straps for binding all together, when required, for removal. Hems are formed at the ends of the sacking for the admission of the end stay bars. In certain cases thick felt, wire, wire chain, or lattice, iron laths, or air or water-tight sacking may be used instead of the ordinary sacking. The improvement in the construction of ordinary folding bedsteads consists in welding the end stay bars to the side rails.

[Printed, 6d. Drawing.]

A.D. 1853, August 4.—N° 1826.

FLÉCHELLE, BARTHELEMY LOUIS FRANÇOIS XAVIER.—“Improvements in the means of carrying, bedding, and bathing “the injured, ill, or invalid persons.” This invention comprises a litter, a bedstead, and a bath. The litter is an iron frame composed of two similar parts pin-jointed, so that they can be united or separated lengthways and breadthways. A band holds the two parts together. At each corner is a handle which turns down and forms a leg secured by supports. Springs are provided at the hinges “to avoid all shock in carrying.” Two pieces at the head turn on centres, so that they can be raised to support a curtain, and at the head is a frame which can be set at any required angle. The mattress and pillow are each made in two parts connected by a flap and buttons. The side rails of the bed are hinged near the middle. The cross piece at the foot is removeable, and allows a slide to be drawn out so that the operator “can advance into the middle of the bed.” The bedstead turns on a centre, and can be adjusted to any inclination by a curved rack and pinion. There are rests for the arms, hands, and feet. The bath has at top a web strained on a wooden frame pierced with holes. The patient is laid on the web, and lowered into the bath by turning handles at each end, thereby unwinding part of the web which is wound round rollers.

[Printed, 10d. Drawings.]

A.D. 1853, August 20.—N° 1944.

KIMBERLEY, JAMES.—“An improvement or improvements in “raising and lowering various kinds of window blinds, and in “opening and closing window and other curtains, applicable also “to the raising and lowering or winding and unwinding of maps “and other sheets or articles, and to the closing of doors.” The invention, as applied to a roller blind, consists in attaching a line of vulcanized caoutchouc or other elastic material at one end to a board above the roller, or to the window frame, passing it over a pulley and fastening it to the axis of the drum. By pulling down the blind a portion of the line is coiled round the drum and held by a ratchet and pawl. The portion of the line coiled round the drum may be inelastic. “By inverting the whole, and “placing it at the bottom of the window” the invention “may “be used as an ascending blind.” For closing and unclosing

curtains one end of the elastic line is fastened to one end of the cornice pole; the other is passed over a pulley and allowed to hang down. The outer curtain ring is fastened "at a suitable point to the line." Here again the portion between the attachment to the pole and outer ring need not be elastic. For closing doors the line is placed in a tube running along the top of the door frame. The loose end, passing over a pulley, is connected with the door, and the contraction of the line tends to close it. By making the line work between two pulleys, both in the same plane, it "may be made to close a door opening in both directions."

[Printed, 8d. Drawings.]

A.D. 1853, September 6.—N° 2047.

UPFILL, THOMAS BOLLMANN, and BROWN, WILLIAM. — "An improvement or improvements applicable to metallic bedsteads, couches, chairs, and such other articles as are or may be used for sitting, lying, or reclining upon," whereby the laths are readily attached to the rails. Hooks or tongues are formed on the rails "by cutting or partially detaching" portions of the same, and the laths are pierced with suitable holes for the hooks or tongues to take into.

[Printed, 8d. Drawings.]

A.D. 1853, September 10.—N° 2098.

METCALFE, THOMAS. — "Improvements in portable chairs and tables." In the chair two uprights, parallel to each other, are connected by a flexible back; to them the back legs are jointed. A flexible seat is supported by side rails, and affixed to these are rings which rise or fall on the uprights when the chair is closed or opened. The front legs "cross each other and are jointed together at the front and back by the crossbar." In the table the top rail connecting two legs is hinged to the under side of the table top. The rail, uniting the other legs at top, folds when closed within the former one; when opened, it "rests against the end of the slot" formed by metal straps and bars which support the table top; or it "enters into sockets or bent catches fixed under the table." The first-mentioned legs are jointed to the others as in camp stools.

[Printed, 10d. Drawings.]

A.D. 1853, September 10.—N° 2100.

WARD, JOHN, and CAWLEY, EDWARD.—“Improvements in “chairs, couches, and tables.” The chair seat is formed on a frame, the back end of which is hinged to a bottom frame or base. The back is formed on another frame, whose lower end is hinged to the base towards the front. The seat and back frames cross each other, and the inclination is regulated by notched racks on the one which engage with “necks or axes” on the other. Elbows may be screwed to the back frame, and the base can stand on legs or castors. Couches are constructed on the same principle. The table top is hinged to frames, which, after crossing each other, are hinged to a base and are furnished with racks and necks for regulating the height of the table.

[Printed, 10d. Drawings.]

A.D. 1853, September 14.—N° 2129.

WALLACE, ALEXANDER, and GALLOWAY, GEORGE.—“Improvements in the construction of portable articles of furniture.” This invention is described in the construction of a chair, which is entirely carried on four diagonal legs of flat bar iron connected in pairs by tie rods at top and bottom and by central joint studs. The seat rests upon an open iron frame having on its front and back edges joint eyes for receiving the upper tie rod of the front pair of legs, and “a back spindle quite disconnected with the leg framing.” This spindle has formed upon it at each end an eye which embraces the vertical rail of the back; both eyes slide freely on the rails, which are surmounted by a back cross piece and have their lower ends “inflexibly connected at the required angle with “the upper ends of the two pieces forming the leg frame.” Instead of the guide eyes adjusting hooks or catches may be used “to hold the seat in its two extreme positions;” and other materials than iron may be employed. In constructing a table the top “is in two halves, the line of junction being down the middle at “right angles to the folding plane of the legs. The supporting “frame of the table top is jointed in the centre also.”

[Printed, 6d. Drawing.]

A.D. 1853, September 26.—N° 2210.

ELLISDON, JOSEPH.—“Improvements in chairs, whereby they “are rendered more portable and can be converted into other

"useful articles of household furniture," namely, beds, settees, and ottomans. A seat frame of iron or other suitable material is mounted on legs either screwed or jointed. The front side of this frame is thinner than the others, and two or more ribs extend across it from front to back. When the chair is constructed with a leg rest, the ribs "are broader for some inches from the front than at the back," to act as a stop to the leg rest. This rest is composed of two frames jointed together, the smaller being made deeper on the back "to allow notches to be cut into the lower edge thereof to admit a narrow portion of the ribs;" the larger can be drawn out beyond the seat frame and placed at any angle and kept there by a stop on the joint. "On the upper side of this frame is an upholstered frame, jointed to the top thereof at its back edge," and held at any inclination by crutches and notches. Across the front of the seat frame is a bar, underneath which the leg rest slides, and to which is fastened the front of the web whereon the seat cushion rests. If there is not a leg rest, a single bar forms the front edge of the seat frame, and a head board is jointed thereto and folded under the cushion. Arms can be attached to the frame. The chair back consists of two cushioned frames united at top by rule joints. The outer frame has folding legs jointed to it; the inner one is jointed to the back of the seat frame, and "stops or catches of a crescent shape" prevent the frames from falling backwards. The stops are fastened to the seat frame "by pins at one end and by small thumbscrews at the other, so that the slope of the back of the chair can be regulated."

[Printed, *See* Drawings.]

A.D. 1853, October 8.—N^o 2310.

PLIMPTON, HENRY RICHARDSON, and PLIMPTON, JAMES LEONARD.—"A new and useful article of furniture, to serve the purposes of a bedstead, a toilet table, or a washstand and a writing desk." The article presents the appearance of a wardrobe or secretary; it is supported on a base and two posts rising therefrom, and having on their tops "hinges or moveable joints upon which the whole of the bedstead and portions of the secretary are hung so as to turn freely." The visible and moveable parts are a cornice, a cap piece, sides, false doors and drawers, the front of a toilet table, drawers for stationery, &c., and a writing

leaf. The invisible parts are a bedstead and bed, scroll posts with head and footboards attached to them, a moveable back hinged to the toilet table, and articles for the toilet and for writing. When it is required to use the bed, the toilet table is drawn out, the back is turned up, the cap piece is taken down, "turned one-half round," and made to form a top to the table; the false drawers are let down and the toilet articles taken out; the table is then placed in any convenient part of the room. The cornice is turned over in front, "and forms the foot legs to the bedstead." The bedstead and bed are turned down. "The front portions of the "secretary, with the writing table, are brought beneath the bed," and the sides are unhooked and turned down, "serving to hide from view the writing table." The scroll posts are set up—these are hinged to the bed frame and keep the bedding in place when not in use, being fastened on top of it by a strap attached to a button on each board. A box containing sand or other matter is applied to the bed frame "for the purpose of counterbalancing the bedstead foundation upon the posts." Friction springs, spring catches, &c. are attached to the parts requiring them.

[Printed, 1s. Drawings.]

A.D. 1853, October 22.—N° 2443.

MERMET, JEAN FRANÇOIS.—(*Provisional protection only*).—"An elastic spring, contained in a cylinder tube or a tubular case, the lid of which moves up and down according to the pression." If the spring is of metal, "it is disposed in spiral wires." If it is of caoutchouc, gutta percha, or any elastic substance, "it is massive." It can be used "in the inside trimming of common carriages, railway carriages, boats' and ships' cabins;" also in "covered benches, sofas, arm-chairs, mattresses, &c. &c." By means of the "continuous pression of the spring," presses can be made "to dry the skeins," and "reels can be settled for winding the skeins" of thread.

[Printed, 4d. No Drawings.]

A.D. 1853, November 1.—N° 2527.

TYLOR, HENRY.—"An improved chair bedstead," composed of three frames connected by hinges. One frame is supported on four legs; a second (lying on the first when forming part of a chair) has arms attached to it by a joint and supporting rods.

The free ends of the arms are bent into the shape of hooks to hold up the third or back frame. This frame has hinged to it two rods which lie within it when it is upright and form legs when it is turned down. The second frame has similarly hinged to it a frame which forms the head of the bedstead. The mattress is made in three portions, one to fit each frame. All the frames are provided with laths; but sacking may be used instead. If the frames are made of wood, the free ends of the arms "are fitted with a spring catch or other suitable fastening."

[Printed, 6d. Drawing.]

A.D. 1853, November 2.—N° 2546.

ILES, CHARLES.—"Improvements in metal bedsteads." The posts are hollow and have an enlargement formed on them at the part where the rails join; in each enlargement are two slots. The end of each rail, pierced with a hole, is passed through a slot, and both are secured by a rod descending through a hole in a disc or discs placed inside the post. In a modification the rod is passed through and withdrawn from the holes in the rails by turning a collar on the enlargement. The collar is furnished with a pin which passes through a horizontal slot in the post and enters a spiral slot in an inner tube to which the rod is fastened.

[Printed, 8d. Drawing.]

A.D. 1853, November 3.—N° 2553.

PATTERSON, WILLIAM.—(*Provisional protection only.*)—"Improvements in chairs." The seat is moveable, and rests on projecting studs. The frame to which it is fitted is hinged front and back to the front and hind legs, so that, when required, it "may be made to lie flat upon the back of the chair." The parts are secured in position for use by means of thumbscrews.

[Printed, 4d. No Drawings.]

A.D. 1853, November 5.—N° 2572.

HYDE, JOHN.—"Improvements in furniture castors." The invention applies solely "to what are usually termed ball castors, and consists in a certain novel method of mounting the ball in the frame of the castor in order to reduce the friction upon the same, and to enable the ball to move with perfect freedom and ease in every direction." The ball may be of metal, glass, earth-

enware, or any other suitable material; above it, "either immediately above its centre, or a little from the centre thereof," is placed a small "ordinary castor" with one, two, or more wheels "bearing upon the said ball or globe and supporting the frame "or socket" of the improved castor. Fixed to or forming part of the socket is a frame from which descend arms; in these are mounted friction rollers or wheels, and to their ends are attached ("by means of the same pins which form the axes" of the friction rollers) claws "furnished with points slightly inclining towards "the centre of the ball" and "extending just so much below the "horizontal diameter of the same" as to prevent it from falling out of its place. Or a ring "of rather smaller dimensions than "the diameter of the ball" may be secured to the claws or arms. A helical spring is applied either between the pin of the small castor and the socket or frame, or "in the rim or belt" of the same, in order to give additional freedom and elasticity. "The "particular form of the frame may be varied to almost any "extent," and the patentee describes several modifications. The friction wheels may be mounted in springs connected to the arms. The arms may be loose and secured in dovetail grooves in the frame. The frame, arms, and claws may be "all of one piece." This small castor may carry friction wheels which run upon the under side of the frame; these may be "flat, round, or bevelled "on their edges." In a castor "adapted for light articles" the arms and small castor "are in one piece," and the frame and socket "also in one piece." In a bed castor the pin of the small castor is pointed and bears against a steel plate fixed in the frame.

[Printed, 8d. Drawing.]

A.D. 1853, November 11.—N^o 2621.

LEVIEN, JOHAN MARTIN.—(*A communication.*)—"An improved construction of expanding table." The end pieces of the frame and the sliding pieces are recessed, the latter on both sides, and "lateral grooves are formed in the sides of these "recesses." Fixed in the recesses, and projecting therefrom, are filling pieces or blocks to which plates are secured carrying anti-friction rollers. "The horizontal edges of the plates" slide in the lateral grooves, "and thereby effect the locking together of "the several sliding pieces."

[Printed, 6d. Drawing.]

A.D. 1853, December 29.—No 3018.

WHITE, JAMES.—“Improvements in friction joints or fastenings.” This invention “consists simply in forming the joint hollow, and filling the space with a packing of cork, which is caused to bear tightly against the contact metal surfaces.” 1. A joint for a swing looking glass:—a bracket, pierced with screw-holes for attachment to the frame has affixed to it a barrel provided with a flange, which also is pierced with screw-holes for attachment to one of the standards. “Through the boss of this barrel the stem of a cap piece passes, the extremity of which stem is threaded for the purpose of screwing into a threaded hole made in the bracket.” The barrel is filled with cork packing, “and the requisite degree of stiffness is given to the joint by screwing up the cap piece before securing the joint in position.” To prevent the cap piece from working loose, “a key is driven in between the screw and the bracket.” 2. A joint for carrying the top of a card table consists of a plate, to which the table top is screwed, the barrel (as before) screwed through its flange to the table-frame, and the cap “with its central stem, the axis of which is the centre of motion of the joint.” 3. “A central jointed support for glasses and music or reading stands:”—the stem (which is let into the standard) is composed of “two hollow counterpart pieces, provided each with an arm;” in the head of the stem filling pieces of cork are placed, and between them a lever is gripped; the arms have sockets projecting inwards; these are screwed together (by means of a male screw on one, and a female screw in the other), and form “the fulcrum for the lever.” The required amount of stiffness is given “by turning round one of the counterpart pieces” until the cork “binds sufficiently tight against the lever to hold it in position against the counteracting weight” of the article which it is to support. 4. Cork used as “a friction plug,” for retaining a reading stand in position, and as “a packing for the holding down pins to work in:”—the stem of the stand is tubular, “capable of turning in the pillar which carries it,” arched at its upper part, and at its upper extremity jointed to a bracket; pendent from a horn on the bracket is a rod, which descends through a slot cut in the arch and carries at its inner end a plug of cork. The plug, “confined between two buttons on the rod,” fits the bore of the tube and works up and down in it,

and is caused to bind tightly against the inner surface by turning the lower button. 5. The stems of pins "for holding down the "leaves of an open book," pass through boxes fitted with cork packing, and can be raised or lowered to suit the thickness of the book. 6. There is a drawing of a joint applied to a button for fastening cupboard doors.

[Printed, 6d. Drawing.]

1854.

A.D. 1854, January 12.—N° 77.

SERF, JOSEPH.—(*Provisional protection only*).—"Improvements "in seats or chairs for advertising." This invention consists in inserting a plate or plates of wood, metal, or any other convenient material, with advertisements thereon, in grooves made in chairs, stools, and all kinds of seats in any visible part.

[Printed, 4d. No Drawings.]

A.D. 1854, January 21.—N° 145.

BEAUDELOUX, MARIE LOUISE LISE.—(*Provisional protection only*).—"A self-acting cradle with improved mattress." Clock or wheelwork is placed in such a position that aided by connecting arms it will cause the cradle to be "set in a gentle rocking "motion." The mattress waterproofed is grooved or channeled on one or both surfaces, and sufficiently inclined to allow the infant's urine to flow down into a receiver.

[Printed, 4d. No Drawings.]

A.D. 1854, February 15.—N° 368.

WREN, JOHN.—"An improved construction of folding chair "bedstead." This article is so far of the ordinary construction that it is composed of three frames hinged together, legs jointed to the seat frame, and a headpiece and leg-bar jointed to the back frame. The novelty consists in attaching the arms to the seat frame by bearing rods on the sides of the frame and eyes at the lower extremities of the arms, and to the back frame by buttons and slots. By this arrangement the arms "may be folded "inwards" when required.

[Printed, 6d. Drawing.]

A.D. 1854, February 20.—N° 402.

BEALL, JAMES.—“Improvements in apparatus for suspending “looking glasses in frames.” The axis passes from side to side of the glass and through both pillars; on one end is a handle, on the other a male screw on which a handle screws, causing pressure between the inner surfaces of the pillars and the outer surfaces of the side frames, or against washers placed between these parts. The axis may pass through the side frames or at the back, and be attached by metal straps; it may be made in two parts and screwed together.

[Printed, 6d. Drawing.]

A.D. 1854, February 28.—N° 491.

HOLBECHE, JOHN SODEN.—“Improvements in the construction of invalid bedsteads, which said improvements are also “applicable for couches, chairs, and reclining seats or beds for “invalid carriages.” The frame on which the mattress is placed is divided into three portions hinged together. Jointed to the head portion is a quadrant notched and slotted parallel to the notches for a pin or friction roller which keeps it in place; a catch at the end of a rod, having on it a helical spring, enters the notches. The back end of the rod is attached to a chain or cord, which, passing over pulleys at the bottom and top of the head post, descends conveniently for the invalid’s hand. Fastened to the lower ends of the head posts are caoutchouc springs; their other extremities are hooked or otherwise secured to a lever, “which is fastened to and projects beyond the head part.” The hinge joining the head and middle portions may be replaced by an arc, and, if its outside be notched, the quadrant may be discarded. The above arrangement constitutes the first part of the invention. The second part relates to “converting the foot board into a table or reading desk:”—it is divided horizontally and jointed; on the lower division is placed a perpendicular rack, on the upper a support which takes into the teeth. The “foot “piece” also is moveable and forms a kind of rest; on its under side is a projecting pin which fits into holes in the framework. The third part shows how the third portion of the frame may be inclined at any angle for the support of the legs; a bracket descends from the middle portion, and a support thereon takes

into the teeth of a rack fastened to the third portion. The patentee describes how these arrangements may, with slight modifications, be applied to an iron bedstead, to "a chair to be used as a bed," to a sofa, to a reclining chair, to a rocking chair, and to a wheel chair. The fourth part refers to shortening or lengthening the feet of bedsteads; namely, by making the legs to screw into or out of the posts, or the reverse.

[Printed, 1s. 4d. Drawings.]

A.D. 1854, March 1.—N° 503. (* *)

ILLAKOWICZ, MICHEL NAPOLEON.—(*Provisional protection only.*)—"Improvements in picture frames." It consists "in rendering the same picture frame susceptible of being enlarged or diminished in any given proportion, and that without deranging the position of the ornaments." "These expanding picture frames, and also the ornaments used with them, can be made of any suitable metal or other material, such as gutta percha, papier maché, wood, or of any combinations thereof." These frames "are made in eight principal pieces; the usual frames being divided into four at the centres of the four pieces composing the frames." "At the back are four other pieces, on which, by means of mechanism, the four corner pieces are made to slide; thus the proportion of the parallelogram, as well as the size, can be changed at pleasure."

[Printed, 4d. No Drawings.]

A.D. 1854, March 1.—N° 506.

METCALFE, THOMAS.—"Improvements in the manufacture of portable and folding bedsteads, chairs, seats, tables, and cots." In all these articles the legs consist of four bars or sets of four bars, "connected together at or about the middle of their length by means of axes;" they are joined in pairs, and "the two pairs are connected by a third axis, in such manner that all four bars will come together and lie parallel to each other." In bedsteads the upper ends of the bars are pointed, each entering a corner in the sacking; or the ends are not pointed, and a strap to which the sacking is fastened surrounds and "retains the frame in a proper form." Two of the bars have folding hinge pieces for a piece of sacking to constitute a head board. In chairs two of the bars are made with hinged parts to form a back; on them is placed a

back of canvas, leather, or other substance ; the back is supported by cords or chains hooked thereto and to the front legs. Tables and seats are constructed by jointing the tops of each pair of crossed legs to the under side of the top or frame. The cot is suspended between two pairs of crossed legs, being fixed at head and foot to the upper ends thereof ; at the head is a curved rod for a hood, hinged on each side to a bar.

[Printed, 2s. 2d. Drawings.]

A.D. 1854, March 4.—N^o 528.

MADELEY, RICHARD.—“ An improvement or improvements in “ the joints and framing of metallic and other bedsteads, chain, “ sofas, couches, and such other articles as are or may be used for “ sitting, lying, and reclining upon.” In the corner blocks are wedge-shaped cavities (the wide end being uppermost) and slots opening into the cavities. The ends of the rails are made with corresponding wedge-shaped pieces and necks, which, when introduced into the cavities and pressed down, “ force the corner blocks “ back or outwards, thereby causing the expansion of the framing” and “ the tightening of the laths or sacking.”

[Printed, 8s. Drawings.]

A.D. 1854, March 8.—N^o 559.

BROWN, JOSEPH.—(*Provisional protection only.*)—“ An improved method of swinging furniture and other articles for “ travelling by sea or land, and other purposes.” A swing table “ is made with one centre, on the ball and socket principle ;” up through the socket is passed a rod, “ at the bottom of which is a “ weight fixed into the centre of the bottom of the table.” In order to “ prevent oscillation and adjust the balance,” india-rubber or other springs are attached in the same way as specified in the letters patent granted to the patentee, October 2nd, 1852, N^o 156.

[Printed, 4s. No Drawings.]

A.D. 1854, March 8.—N^o 560.

BLAIR, JOHN.—“ Improvements in beds or couches, and “ other articles of furniture.” First improvement, the construction of the side frames of portable bedsteads, and the method of fixing legs to them :—the frames of angle iron are made in

two pieces, "jointed together at the centre by means of a flat " rule joint on their vertical flanges." A leg is jointed to the vertical flange of each piece; the legs are jointed to each other at their lower extremities; or they cross and are connected by a rivet. Additional legs may be similarly jointed to the side frames at their extreme ends. Second, an improved corner joint:—the vertical flange of one frame piece is turned in, and to the turned in portion a dovetail wedge is fixed, which fits into a socket fixed to the vertical flange of the other frame piece. A pin, "conical or " with parallel sides," may be used instead of the wedge. "A " rule or other joint may be applied to one or more corners." Third, the use in the manufacture of mattresses and bedding " of felted or milled woollen fabrics."

[Printed, 8d. Drawing.]

A.D. 1854, March 11.—N° 590.

MONZANI, WILLOUGHBY THEOBALD.—(*Letters Patent void for want of Final Specification.*)—"Improvements in bedsteads " and packing cases or boxes to contain the same and other " articles." The case is made in two portions, one fitted up as " a portmanteau, the other "arranged for receiving the parts con- " stituting the bedstead." The two portions are joined "at the " ends of a strong fabric or sacking." They are also "connected " by means of straps or cords, which, when the bedstead is stretched " out and formed, come near the ground." Stretching bars are used on each side which enter grooves or sockets formed in the portions.

[Printed, 4d. No Drawings.]

A.D. 1854, March 13.—N° 601.

GLENNY, JOHN.—(*Provisional protection only.*)—"A portable " camp bed," consisting of a bed or mattress attached to or placed upon a waterproof canvas covering, and having two water- proof wings or side pieces which serve as a covering to the bed when in use. The bolster is made in one piece with the bed, or detached.

[Printed, 4d. Woodcuts.]

A.D. 1854, March 20.—N° 655.

ESNOUF, EDWARD, MAUGER, CHARLES, junior, and LEWIS, GEORGE WASHINGTON.—"Improvements in portable dwellings

"and vehicles for travellers or emigrants." This invention consists principally of a tent, the framework of which is convertible into a chest or into the body of a vehicle. The framing is composed of a series of frames hinged so as to fold one upon another. One fitted with a door forms either the entrance to the tent or the lid of the chest. To form a tent the frames are opened out into a rectangle or polygon; they are secured by clips above, and metal pegs below, and if further security be required, metal rods can be passed through them. The canvas covering is supported by a central pole and fastened to the frames by loops and eyelet holes. The pole may be telescopic, or it may be made by uniting the shafts by bolts or nuts, or by a collar. The framing may be secured to the pole by radial rods. The canvas when taken down may be folded round the top joint of the telescopic pole. If a permanent dwelling be required, the framing may be covered with wood or other material. The piece of wood which serves as a bottom for the chest may be converted into a table by screwing legs into it, or into a bedstead by adding a head board. The wheels of the vehicle form a pair of tables by screwing legs into the felloes and by placing a round top upon the upper side. Planks for seats are fitted inside the vehicles; these are moveable and are made into seats for the tent by screwing metal legs to them. All the legs form a support for the tilt of the vehicle. The patentees describe a tent constructed without a central pole, their methods of fastening the joints of the telescopic pole, and various shapes for the vehicle.

[Printed, 1s. Drawings.]

A.D. 1854, March 24.—N° 691.

ROOM, HERBERT, and MORTON, WILLIAM.—"A new or "improved method of ornamenting metallic bedsteads and such "other articles of furniture as are or may be made of metal." Pillars of bedsteads, legs of chairs, sofas, &c. are enclosed in ornamental casings "of glass, china, earthenware, or other vitreous or "semi-vitreous substances, metals, metallic alloys, and such other "solids as are or may be applicable to ornamenting the same." The patentees describe their method of encasing the pillar of a bedstead, but do not limit themselves to the precise details:—A metallic rod, "which constitutes the true pillar," is formed with a shoulder thereon; the corner block is "dropped on the rod" and

rests on the shoulder; a collar is passed on the rod (one from each end) and drops into a recess in the corner block; taper or other tubes pass upon the rod and engage with the collars either externally or internally, and caps are added at top and bottom; the top cap may screw on or be surmounted by a screwed ornament; the bottom cap may slide on the rod, and the rod be terminated by a castor, or it may be screwed directly on to the rod. Or the bottom of the rod may be screwed into a castor, and the other parts may be dropped on in order. Or a shoulder for the other parts to rest upon may be formed near the bottom of the rod. Sometimes the rod "is in its lower part furnished with plane sides ornamented "with panels," which are attached by dropping into dovetails.

[Printed, 8d. Drawing.]

A.D. 1854, March 31.—Nº 739.

BROWN, ARCHIBALD DOUGLAS.—"Improvements in beds, "couches, and other articles of furniture." The framework, head and foot boards, pillars, and canopy or curtain supporter, are made of wood and united by the "metallic dovetail wedge and "socket joints" for which Letters Patent were granted to Mr. Brown in 1852. "A central longitudinal stretcher bar" is passed between the head and foot rails, and the frame is further stayed by a cross bar, both attached by dovetail joints; either bar may be made in two pieces, a dovetail joint being required at the point of intersection. The canopy, besides being dovetailed to the top of the pillars, is sustained by brackets dovetailed to both. The curtain rods are likewise dovetailed at each end to the canopy. The dovetail joint pieces are "screwed, recessed, or otherwise "attached to the timber details."

[Printed, 10d. Drawing.]

A.D. 1854, April 5.—Nº 784.

HARLOW, JONATHAN.—"Improvements in the manufacture "of metal bedsteads." The first part of the invention consists in applying "a peculiar form of stop joint to the pillars or "stretchers of bedsteads." The joint consists of a plate carrying the axis on which the stretchers turn; it is provided at each end with a projecting pin, which coming between the stretchers prevents them from being pressed out too far. The second part "has "for its object the manufacture of the pillars of metal bedsteads.

“ of malleable cast iron.” The pillars are cast hollow and afterwards annealed.

[Printed, &c. Drawing.]

A.D. 1854, May 11.—N° 1049.

TYLOR, HENRY.—“ An improvement in chair bedsteads.” This chair is of the usual construction as regards the three frames and legs of the middle frame and the cushion. The frame constituting the lower end of the bedstead has riveted to it two legs which, when the chair is folded up, are attached to the back frame by rings, hooks, screws, &c., and help to support it. To the back are hinged two frames, one “ folded down within it,” and serving as legs when required, the other forming a headpiece to the bedstead.

[Printed, &c. Drawing.]

A.D. 1854, May 29.—N° 1190.

SABLONS, ANDRIEU ERNEST. — “ Improvements in the construction of trunks, travelling bags, portmanteaus, and other similar receptacles.” These articles are made of the ordinary materials, and are so constructed that, in addition to their use as separate and distinct receptacles, they can be placed one above the other and form “ a veritable piece of furniture having all the convenience and elegance of a single or double chest of drawers, or even of a scrutoire.” They are made “ with two compartments, each containing a drawer,” which is prevented from falling out by a stud fastened to a cross strap or rod. The drawers are provided with handles let into and flush with the front, and with locks having hooked bolts. Each compartment carries a leather flap or apron; when the compartments are in travelling order, the aprons overlap and are fastened with padlocks; and when the boxes are set up as a chest of drawers, one apron is turned back over its compartment, and the other underneath. Or one apron may suffice, fastened either to the lid or to the side under the lower drawer. Bars (moveable or immoveable) are placed under each box, serving as feet to raise it above the ground; on the ends of the bars and on the top of the sides of each box are screw rings, so that, when the boxes are placed one on the other, a padlock or a pin may be passed

through a screw ring of one box and the corresponding ring of the next lower box. In the sides of the box which is to be placed uppermost are sockets for hooks or pegs, and for the lowest box are provided "wooden, cast, or caoutchouc feet having a small brass end for adhering to the plate of the box." One drawer may be made with a front which will let down, and which "can be used as a writing, dining, or dressing table." The bottom box is usually made with one drawer, a lid, and one apron which is fastened with straps and buckles. The lid when opened is supported by "a metallic bow," which "acts as a spring," and when the lid is down lies "along the internal side of the box, above the side of the drawer." Or this box may be provided with several drawers to contain "samples of commerce or other articles." Minute details of the construction of the boxes and their appendages will be found in the Specification.

[Printed, 1s. 8d. Drawings.]

A.D. 1854, June 9.—N° 1278.

COOK, BENJAMIN. — (*Provisional protection only.*) — "Improved means of ornamenting metallic bedsteads, chairs, and couches, which said improvement is also applicable for ornamenting standards for glass frames, tables, and fire screens, cornice poles, and other articles of furniture." A glass or china tube, "put together in any number of parts," is passed over the bars or tubes of the posts and legs of bedsteads, chairs, and couches, the standards of looking glasses, pillars of tables, and suitable parts of other articles. Or parts may be covered with china, parts with glass.

[Printed, 4d. No Drawings.]

A.D. 1854, June 16.—N° 1316.

PARRAMORE, THOMAS. — "An improvement in the manufacture of air-tight seats, beds, and other articles required to be inflated and air-tight." The outer surface of woven fabric intended to be made into air-tight seats, &c., is coated several times with oil (linseed oil is preferred) mixed with vegetable black or other coloring matter. The inner surface is treated as usual, and the articles are finished in the ordinary manner.

[Printed, 4d. No Drawings.]

A.D. 1854, June 27.—N° 1417.

ILES, CHARLES.—“Improvements in metal bedsteads.” The frame rails have inclined ends cast or otherwise affixed thereon; these ends enter recesses cast or formed in the enlargements on the posts; the longitudinal and transverse stretchers are furnished with pins, one at each end, which are placed in holes in the rails; the metal laths are attached by studs in the ordinary way. Or the ends of the rails may be formed without castings, but cut into a suitable shape to enter the recesses, and the stretcher ends be made with screws, which pass through holes in the rails and are secured by nuts,

[Printed, 1s. 2d. Drawings.]

A.D. 1854, June 30.—N° 1435.

MONZANI, LOUISA (administratrix of Willoughby Theobald Monzani). — “Improvements in the manufacture of folding chairs, stools, and other articles to sit or recline upon.” In the Provisional Specification the patentee describes the construction of a folding chair and of a camp stool. “Two frames are used, which in use cross each other, and move on an axis in a similar manner to a camp stool.” On the front rail is fixed canvas “to produce the seat and back.” The back frame is made in two parts, which “fold or assume different positions in respect to each other and to the other frame.” The other end of the canvas passes under a back rail and is attached to the upper rail of the frame, being wound on a roller “so as to increase or decrease the length between the front rail and the upper rail of the back.” The position of the folding frame is regulated by pins, stops, &c. In a camp stool, “the frame or legs, which have the front and back rails fixed to them, are formed with an axis, or hinges and axes, by which the side frames are each capable of folding in respect to themselves, as well as in respect to each other.” If the camp stool is made with a back, three frames are used, “capable of folding one within the other;” and the front rail is in some cases so formed as to have the canvas “fixed from side to side, and so as to support the person without resting on the front rail.” In the Specification “in pursuance of the conditions of the Letters Patent,” the words are repeated of the Provisional Specification, No 590, dated March 11th, 1854; to these is added that each portion of the case should be complete

so as to be capable of presenting "two separate yet complete " packages ;" that the sacking should be permanently fixed to one portion only ; that the stretchers may be hinged at the ends to the portions and fold within recesses ; and that a cross stretcher should be employed having at each end a button which takes into a slot in the side stretchers.

[Printed, 6d. Drawing.]

A.D. 1854, July 7.—N^o 1499.

ELLISDON, JOSEPH.—"Improvements applicable to reading, " lounging, and other chairs." The seat, back, and arms are constructed so as to form one piece ; the lower portion consists of a frame mounted on legs. The parts are connected in such manner that the upper rotates on the lower upon a pivot and friction rollers. A reading desk can be attached to the lower portion.

[Printed, 6d. Drawing.]

A.D. 1854, July 11.—N^o 1518.

MOORE, CHARLES FREDRICK.—(*Provisional protection only.*)
—"Improvements in the construction and use of an apparatus, " closet, or receptacle to be used instead of a water closet or other " necessary, and which may be either fixed or portable." A square or other shaped box is fitted with an air-tight lid, "a board " or step being pressed by the foot or other part of the person " coming into contact with the box ;" or the foot may act on a lever or lever and spring, which will open an air-tight trap or valve. At the same time the lever or spring, "connected if " necessary with either a valve, double valves, slides, or springs," distributes from a reservoir a disinfecting powder or fluid, which will deodorise and dry the fecal matter on its falling into a pan ; further also, on the person rising from the seat, "removal of con- " tact or pressure, or by lever spring or both, another discharge " or shower of disinfecting substance takes place." The fecal matter is to pass into a receptacle separated from the urine, although any fluid therefrom may drain into the urine receiver by means of a perforated partition of the pan "with a flange " attached near the anterior part." The receiver has "a dis- " charge or overflow pipe, with a self-acting valve, which may be " detached when required ;" it may be attached to and removed with the fecal receptacle, or one or either may be removed sepa-

rately; "or one or both may be separately or jointly lowered to any convenient place to be emptied." A ventilating pipe, with a valve to prevent the influx of atmospheric air into the closet, may communicate with the interior of the apparatus."

[Printed, 4*l*. No Drawings.]

A.D. 1854, July 19.—N^o 1584.

BROWNE, JOHN COLLIS.—"Improvements in the manufacture of camp bedsteads." The frame is of light strong wood or other suitable material, and the side rails are divided into three equal portions which are so hinged together that they can be folded upon each other." The rails are connected by strips of webbing or canvas, and these are kept in tension by cross stretchers at the ends of the portions and near the joints. The stretchers are dovetailed into the side rails, and short legs are screwed through both. In each end stretcher an upright may be inserted for supporting a blanket or canopy sustained by a cord. Straps and buckles are fastened to the side rails "for the purpose of retaining the bedstead in position when placed in other than full length position." The bedstead is convertible into a chair by raising the head portion and folding the foot portion under the middle division; as the screws of the end legs will have to pass in this case through two side rails and stretchers, they are made of double length, and knobs cover the screw ends when not so used. The legs may be made of light tubing with a large button head on the foot and a worm and collar at the upper end. The end stretchers are straight and the middle ones curved; they may all be constructed with metal ends "strengthened by edge ribs." If canvas is used for webbing, a double sheet may be used "so as to be available for stuffing with hay or any suitable material found on the spot." The whole when folded up is enclosed in a flexible case.

[Printed, 1*s*. Drawings.]

A.D. 1854, August 4.—N^o 1708.

HALLÉN, EDWARD. — "Improvements in chairs, chair bedsteads, and other seats and bedsteads." This invention relates, first, to making the frames of chairs, couches, &c. of iron "flat horizontally, or flat the flat way of the frame" and filling the same in with cane or other material; secondly, to making the

supports and other parts flat also, so as to fold with their flat sides to the flat of the frame or to shut up within it; the supports are held rigid in position by having short arms which are pinned to ears or staples on the frames; their bottoms extend from side to side, thereby affording "a larger bearing." A moveable head is fitted to a frame and support by passing the stem of the head through a hole in the frame and a staple on the support; a neck projects from the stem where it rests on the frame. In constructing a chair bedstead the foot frame folds over the seat frame; the head frame slides under the seat frame; "when drawn out it is held firm by the ends being formed in a wedge shape." Supports and a head (at both ends if required) made as above are added. The middle legs fold up under the seat frame; they are held firm when down by stop joints and stretchers. Arms are joined to the seat frame "so as to rise and fall;" when forming part of a chair they are attached to the back by thumb catches.

[Printed, 10d. Drawing.]

A.D. 1854, August 12.—N^o 1759.

COX, THOMAS.—(*Provisional protection only*).—"Improvements in stools, cushions, and hassocks." The first part relates to "providing stools with moveable covers" which may be made in a variety of ways, some of which are described in the Specification. The second to furnishing kneeling stools, cushions, and hassocks, "with recesses or receptacles in front" lined with fur or other substance to protect the feet against the cold.

[Printed, 4d. No Drawings.]

A.D. 1854, August 18.—N^o 1814.

KER, WILLIAM, and KER, MATTHEW.—"An improvement in the frames of expanding tables," enabling them "to be extended and closed with facility in all states of the atmosphere." Metal plates, to which rollers "formed with flanges" are connected by studs, are let into recesses in one frame; a T-shaped tongue or slide is screwed to the adjacent frame; it is made of a strip of metal having another strip of metal or wood "of less width behind it, so as to form an edge on each side, which edges rest upon the flanges of the rollers;" or "this tongue and slip may be formed in one T-piece." The tongue slides in

a groove in the first-mentioned frame. Metal clips may be used instead of rollers.

[Printed, 6d. Drawing.]

A.D. 1854, August 22.—N° 1845.

MERIWETHER, WILLIAM HUNTER.—“Improvements in producing surfaces for lying, reclining, or sitting upon.” A series of wires, “bent into an undulating or zig-zag form,” are affixed to two bars, their ends being passed through mortises therein. The bars are connected to the side rails of a bed, chair, or couch, and the tension is regulated by “tempering screws” in the end rails, or by other means. The forms of the undulations may be varied, and the patentee describes the method which he prefers for making them.

[Printed, 6d. Drawing.]

A.D. 1854, August 31.—N° 1902. (* *)

ILLAKOWICZ, MICHEL NAPOLEON.—(*Provisional protection only.*)—“Improvements in picture frames.” It consists in “rendering the same picture frame susceptible of being enlarged or diminished in any given proportion, and that without deranging the position of the ornaments.” These “frames, and also the ornaments used with them, can be made of any suitable metal or other material, such as gutta percha, papier maché, wood, or of any combinations thereof.” They are made “in 8 principal pieces, the usual frames being divided into 4 at the centres of the four pieces composing the frames; at the back four other pieces, on which, by means of mechanism, the four corner pieces are made to slide. Thus the proportion of the parallelogram, as well as the size, can be changed at pleasure.”

[Printed, 4d. No Drawings.]

A.D. 1854, September 5.—N° 1937.

BROWNFOOT, WILLIAM.—“A new or improved instrument or apparatus for raising, lowering, and adjusting Venetian blinds.” The blind cords, after passing over pulleys at the top, assume a horizontal direction, pass under two guide pulleys, over two large pulleys, and hang down vertically. Between the large pulleys, and turning on the same axis, is a ratchet acted on

by a pawl; this turns on a centre at the top of an arm to which a cord is attached. On either side of the arm is a projecting pin which bears against a lever situate opposite to each large pulley. When the blind has been raised to a sufficient height, and the cords are loosed, the pawl engages with the ratchet, and the pins pressing against the levers force them against the cords, thereby preventing them from slipping on the pulleys.

[Printed, 8d. Drawings.]

A.D. 1854, September 12.—N° 1982.

BILLING, MARTIN.—“Improvements in manufacturing and “ornamenting castors for furniture.” This invention has reference only to the wheels of castors; the wheel is made of cast iron; a disc of china, brass, or other ornamental material is applied on each side; “a short cylinder of thin sheet brass or “other metal” is placed on the periphery, and the whole is secured by the edges of the cylinder “being burnished or turned “over” the edges of the periphery. The cylinder and discs (when the latter are of metal) “may be ornamented with a design produced during the raising or stamping of the same.” Or the casing may be made of a disc on one side, and a “shell” which comprises a disc and cylinder.

[Printed, 6d. Drawing.]

A.D. 1854, September 16.—N° 2009.

COLLINS, SAMUEL.—“A new or improved castor for furniture.” The novelty of construction consists in “placing a “plate upon the axis of the castor, between the horn and the “bottom of the castor, the said horn being made to bear against “the edge of the said plate, and both horn and plate having “motion upon the axis of the castor.” The parts are, 1, a plate or socket; 2, a pin or axis attached to the plate or socket by riveting or otherwise; 3, a second plate having in its centre a hole through which the axis passes; 4, horns which turn upon the axis and bear against the second plate, the edge of the plate entering a groove round the top of the horns. The second plate and the horns are secured on the axis “by the lower end of the “said axis being riveted, or in any other convenient manner.” Since the horns can turn upon the plate and the plate upon the axis, “there is great facility of motion and little liability of the

"horn becoming fixed." That part of the horns which bears against the plate may be so constructed as to bear against it either all round or on one side only. There must be holes in the second plate to permit the passage of screws and screw drivers for fastening the upper plate to the furniture.

[Printed, 8d. Drawing.]

A.D. 1854, September 18.—N° 2013. (* *)

THOMPSON, NATHAN, junior.—"Improvements in life-serving seats." "The seat is similar to that of an ordinary stool, the sides at the upper part being boxed in as usual, & a bottom is fitted thereto in such manner that the sides and bottom of the seat form a water-tight compartment. At the lower part of the sides of the seat other water-tight compartments are hinged, or otherwise attached, so that, when the seat is laid upon its side, the body of a person, by being pressed against such water-tight compartments, may open them out to admit the body of the person to pass between them, and after such passage through of the body the water-tight compartments are caused to assume their former positions by the action of india-rubber or other suitable springs."

[Printed, 6d. Drawing.]

A.D. 1854, October 3.—N° 2117.

HAMMOND, JAMES.—"Holding a book in such a position that it may be read with ease and comfort in an erect, reclining, or completely recumbent position, to be called 'Hammond's suspension reading desk.'" The desk, of any material, is composed of two pieces joined "lengthways at a right angle," and a piece fitted "to form the bottom and give strength to the form;" the front edge of this piece is "semi-elliptical." Two leaf holders of steel, ivory, or some elastic material, hold the book "by the margin at the sides of the page;" they are screwed to the sides of the desk with a vulcanized india-rubber washer between. To the top of the desk is attached a semicircular wire, allowing the desk free motion; to the middle of the wire is fastened a cord or band, whereby the desk is hung from a hook or bracket; likewise a cord which, "passing down a small tube placed in the angle of the desk" and "through an eyelet hole in the bottom corner,"

is there provided with loops, by one of which it is looped to a small knob or button.

[Printed, 6d. Drawing.]

A.D. 1854, October 10.—N° 2165.

HAMMERICH, VALENTINE WILLIAM.—“An improved construction of buoyant mattress,” which may be used as a life preserver at sea. The mattress is made by preference in two portions; the larger contains two compartments, one filled with elastic stuffing, the other either made waterproof or stuffed with cork, or other woody substance, coated with any suitable varnish. The smaller portion is waterproof and hollow, “so that it may contain provisions.” The larger is furnished with straps and buckles for waist fastenings and shoulder straps, with rings through which the straps of the smaller pass, and with a piece of webbing for a seat.

[Printed, 8d. Drawing.]

A.D. 1854, October 13.—N° 2194.

MONZANI, LOUISA.—(*Provisional protection refused.*)—“Improvements in the manufacture of folding chairs, stools, and other articles to sit or recline upon.” This is merely a repetition of the provisional specification of the Letters Patent granted to Louisa Monzani, No. 1435, dated June 30th, 1854, to the abridgment of which the reader is referred.

[Printed, 4d. No Drawings.]

A.D. 1854, October 14.—N° 2200.

HOLT, CHRISTOPHER.—“Improvements in fastenings for the laths of iron bedsteads, couches, and other similar articles of furniture.” Rectangular slots are cut or punched in the rails. To the under side of each lath end is fixed transversely a hook which is passed through a slot, the shoulder of the hook fitting the slot closely. The two hooks on each lath are “turned in one direction,” but they may be placed in opposite directions when the lath is sufficiently long. Or a hook may be used at one end and “the ordinary descriptions of fastenings” at the other.

[Printed, 8d. Drawing.]

A.D. 1854, October 14.—N° 2202.

MONZANI, LOUISA.—(*A communication.*)—"Improvements in "bedsteads, and packing cases or boxes to contain the same and "other articles." Provisional protection was granted to Wiloughby Theobald Monzani for this invention on March 11th 1854, No. 590. Letters Patent were granted for the same to his widow, Louisa Monzani, dated June 30th 1854, No. 1435, under the title "Improvements in the manufacture of folding chairs, "stools, and other articles to sit or recline upon." The invention is described principally in the former and partly in the latter.

[Printed, &c. Drawing.]

A.D. 1854, October 16.—N° 2209.

THOMPSON, NATHAN, junior.—"Improvements in life-preserving seats." This is an improvement on "the life-preserving "seat," for which Letters Patent were granted to Mr. Thompson, dated September 18th 1854, No. 2013. The water-tight compartments are permanently fixed to the sides or legs of the seat, and the top of the seat and upper compartments are divided into two parts and hinged together; these parts, in ordinary use, are held together by a spring. On the legs are "notches for the "accommodation of the arms."

[Printed, &c. Drawing.]

A.D. 1854, October 19.—N° 2234.

WINFIELD, ROBERT WALTER.—"An improvement or improvements in tubes and rods used in the construction of "articles of metallic furniture," especially bedsteads, couches, "and chairs." These tubes and rods are coated with zinc, tin, copper, or other metal or alloy, and passed through a draw plate or a collar; "the metal or material of which the said draw plate "or collar is composed being varied to suit the metal or alloy "with which the rods and tubes are coated." This drawing process gives to the coated rod or tube a smoothness which may be further improved by polishing the surface with rotten stone, or by any other method. The invention is applicable to rods and tubes of any figure, plain or fluted, to twisted rods and tubes, in short, to all such "as are or may be produced by the process of

"drawing;" and if desired they may be lackered or varnished, painted or japanned.

[Printed, 4d. No Drawings.]

A.D. 1854, October 20.—N° 2241.

MARSH, WILLIAM.—(*Provisional protection only*).—"An improved rocking and lounging chair." The rockers are joined by rails; to their back ends are attached two curved pieces forming the hind legs and side rails. The back and the front legs are also formed of two curved pieces; "these latter curved pieces" are united to the side rails by a metal rod working in slots underneath the chair "at the point of junction of the back and seat." The lower ends of the front legs are furnished with pins which "take into holes in the front part of the rockers." The elbow rests "are hinged to the side rails of the back," and the supports for the same are pinned to the side rails of the seat. The cushion of the back and seat is in one piece. "When it is not required as a rocking chair, it is to be steadied by placing scrolls under the ends of the curved rockers."

[Printed, 4d. No Drawings.]

A.D. 1854, November 3.—N° 2333.

MOINEAU, ISIDORE ALEXANDRE, and LEMASSON, JEAN GUSTAVE.—"Improvements in elastic mattresses and seats." The springs employed are "steel blades or flat steel springs," made either of one blade or of two riveted together at their extremities. The bottom of the mattress is composed of three cross beams united by two longitudinal ones; on them rest the springs. The lower blades are fastened to the cross beams. On the upper blades are placed longitudinal ribs of iron, "attached at their extremities to two little cross bars," which form an arc at each end of the mattress. The ribs are united at equal distances by cross ribs. Modifications: a single spring may be made to extend over the whole width of the mattress; three or four of these bound together by flat iron ribs "form a very good mattress." The springs may be of various shapes and placed "longitudinally or even diagonally." The ends of each spring may be provided with a roller, which may be "replaced by a mere notch made in the ends of the springs." The mattress may be "converted

" into a complete bed by securing feet or supports to the same,
 " and the usual boards at the head and foot."

[Printed, 6d. Drawing.]

A.D. 1854, November 15.—N° 2416.

DAVIES, DAVID.—" An improvement in roller blinds." A rod or axle, " bent to the same curve as the window or other opening to which the blind is to be applied," is secured at each end in a frame or bracket. On the left is a pulley " running free upon the axle;" on the right a pulley with a ratchet and pawl. A coiled spring is fastened at one extremity to the right-hand pulley, at the other to the axle. An elastic tube enclosing the spring is attached at its ends to the pulleys, and the blind is stitched round the tube. A metal stretcher of the same curve as the axle is passed through the hem at the bottom of the blind.

[Printed, 6d. Drawing.]

A.D. 1854, November 16.—N° 2430.

DAY, WILLIAM CHARLES.—(*Provisional protection only.*)—" An improved construction of portable camp bed," which may be used without a bedstead. To the under side of a mattress a waterproof material is applied " of sufficient size to cover the under surface of the mattress and turn over to form a counterpane." Or the counterpane may be of wool without a waterproof coating, but " securely attached to one side of the mattress," so that the blankets and sheets may be wrapped up therein when required to be packed up.

[Printed, 4d. No Drawings.]

A.D. 1854, November 18.—N° 2448.

CALARD, THÉODOLE FRANÇOIS.—(*Provisional protection only.*)—" Improvements in bedsteads." The space " between the bed and tester, bed top or crown " is enclosed " with perforated metallic sheets, wire gauze, or similar material, so as to form a kind of cage and protect the occupant of the bed from currents of air, stings of insects, &c." There is a door in one of the sides, and " for nurlings the cage may be made to assume the shape of ovoidal box or cradle which opens in two halves by means of a hinge." When the bedstead is for an infirmary, a

reservoir is fixed on the cage top, and at the bottom of the reservoir is "a flexible tube, by means of which the water or other liquid may be directed to any part of the bed under it." The component parts of the cage are secured together in any suitable way.

[Printed, 4d. No Drawings.]

A.D. 1854, November 23.—N^o 2470.

WRIGHT, JAMES, and WALMSLEY, JOHN.—(*Provisional protection only.*)—"Improvements in the construction and adaptation of bedsteads." The frame is made in three portions hinged together. In one arrangement, a side frame, head and framing for drapery (the head being "a mahogany or other suitable slab"), and "a sliding frame for wash basin," are connected to the head portion. Under the middle portion is a "wash stand drawer." In another, there are head and foot elevations, a side frame is added to the head and foot portions, an "angle folding flap" to the foot elevation, and a sliding rest to the middle portion. In a third, there is "a folding joint" to support the head elevation which turns on a hinge joint. These bedsteads can be folded so as to form a desk, a double desk, or a table.

[Printed, 6d. Drawing.]

A.D. 1854, November 23.—N^o 2472.

EABORN, EDMUND, ROBINSON, MATTHEW, and KENDRICK, JOHN.—"Certain apparatuses or contrivances for holding hats in churches, chapels, and other public assemblies." These hat holders support hats by the brims; they are fixed either under the seats occupied by the owners of the hats or under the seats immediately before the owners. The holders may be made of various materials and of different shapes. The following are described in the Specification:—1. A pair of iron arms, forged or formed out of one piece of metal. 2. Arms forged in such a way that they may be secured by a metal clip. 3. Wooden arms secured by screws or pins to the back or front rail of the seat or to a separate piece of wood which is fastened to the seat. 4. A circular hat rest made of a strip of metal flattened at each end and pierced with holes for screws. 5. Hat holders made by fixing pins, hooks, or rings along the front and back rails of the seats, and by securing thereto elastic or non-elastic

cords, or by stretching over opposite pins elastic rings or bands.
6. "Where economy is an object" hooks may be fixed under each end of a seat (if not very long), and cords may be fastened thereto from end to end, "about seven inches apart."

[Printed, 10*d*. Drawing.]

A.D. 1854, December 14.—N° 2634.

DAY, WILLIAM CHARLES.—"Improvements in portable camp "bedsteads and bedding," which are wholly or in part combined with portmanteaus. The framework is composed of two side rails, each in two portions joined by pieces which form the tops of the middle cross legs, and a head frame with sockets which fit on the upper ends of the side rails. This head is supported by a pair of cross legs, jointed to the side rails and kept "in correct position" by the sockets. The lower ends of the side rails are bent at a right angle and fit into sockets fixed on the back of a portmanteau. The canvas is sewed to the side rails, strapped to the head frame, and stretched by one or more straps buckled to the front of the portmanteau. The bedding is of sheep skins sewed to the canvas. If the mattress is to be separate, a case of leather or waterproof fabric is employed large enough "to contain the "collapsed part of the bedstead;" it serves as a pillow and a centre on which to roll up the mattress, and to it is attached any suitable waterproof material as a foundation on which to sew the skins. On each side is a sheet of waterproof material, one "double the breadth of the mattress," to form a coverlid. A short piece of the same is attached to the foot also of the mattress.

[Printed, 6*d*. Drawing.]

A.D. 1854, December 28.—N° 2735.

WILLIAMS, MARGARET.—"Improvements in suspending swing "looking or dressing glasses." This invention consists "in the "peculiar adaptation of springs to the knobs, pillars, frame, or "axis, together or singly, or in parts." The axis is a rod (by "preference in one piece) passed through the frame of the glass into or through the pillars, and its ends "may be made variously "adjustable; thus they may have a knob and spring at one end, "and on the other a screw thread, so that only turning the knob "will regulate them; or one or both may have screw ends, with "springs affixed thereto, within the pillars or knobs, or both."

The springs are spiral steel springs or formed of vulcanized india-rubber; "they may also be variously applied, either to one or both knobs of the suspended looking glass, or enclosed therein, or within one or both of the pillars, or between cylinders, or the frame and the pillars, or between the inner sides of the frame."

[Printed, *4d.* No Drawings.]

1855.

A.D. 1855, January 6.—N° 40. (* *)

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.—(*Letters Patent void for want of Final Specification.*)—"An improvement in the manufacture of iron bedsteads."

"This invention has for its object to improve the surfaces of iron bedsteads by substituting a deposition of brass on the parts of an iron bedstead, for the ordinary japanning or painting of the surfaces of such bedsteads heretofore practised; and the improvement consists of employing in the manufacture of bedsteads iron coated with brass deposited from solutions by electric currents, the deposition of the brass being in respect to some of the parts before, and in respect to other of the parts after, being made into form."

[Printed, *4d.* No Drawings.]

A.D. 1855, January 9.—N° 54.

GUESDRON, ANDRÉ GASPARD.—"A furniture table, which may be used for different purposes." The first table described is constructed on the expanding principle. The legs are "made in halves," so as to form eight legs, all furnished with castors. Two flaps are hinged to the middle part which is hinged to the frame. Bedding is contained in "the body part between the four legs." When the three flaps "are raised into the upright position," they are secured by bolts. Curtain rods are attached to the under side of the middle flap by brackets. A sliding board may be added to serve as a reading table. The

frame rods and mattress "are made in three folding parts." The other portions of the bed are described with the second table, which has "no expanding top." The legs are screwed into metal corner blocks. The blocks have on their inner faces two vertical grooves, into which side boards are fitted and secured by screws. In converting this table into a bed, one side board is taken out and fixed on the top of the opposite one by means of pins and holes. The table top is held perpendicular by a hook thereon passed into a screw ring on the upper board. The mattress bottom in this table consists of two frame rods secured to the blocks. Above the rods is fixed on the blocks a moveable frame, whose ends are bent at right angles—in the first table there is a moveable frame at each end—"the end of the frame is supported "by two turning legs," which are kept stationary by pins. A cranked bar unites "the extreme legs of the middle portion of the "table" when it is converted into a bed—"two of these bars are "applied to the ends of the expanding table." The mattress consists of "a sheet of strong material stretched between the rods "by india-rubber thongs that pass through eyelets upon the "bottom sheet and round the frame rods." There are also eyelets in the ends for passing a line through to draw up the bar or bars against the middle portion.

[Printed, 10d. Drawing.]

A.D. 1855, January 20.—N° 161.

JOHNSON, JOHN HENRY. — (*A communication from Pierre Scholtus.*)—"Improvements in the construction of seats and "similar articles of furniture." The seat may be used as a chair, a music stool, or an ottoman; it is composed of a case (to which a lid is hinged) and a stuffed seat connected to the lid and adjustable in height by a screw, which may be fixed in either the lid or the seat and turn in a nut in the other. The interior of the case or pedestal is fitted up as a music holder, or partly as a music holder and the remainder with drawers, or entirely with drawers. In the lower part of the case is a drawer "running on "small castors to facilitate its movement" and provided with a hinged lid, which, when the drawer is pulled out, "will serve as "a footstool." The case may be arranged "in such a manner as "to render it applicable as a spirit holder or cellaret." If the article is to be used as an organ stool, "the seat should be slightly "inclined" and project in front beyond the pedestal; and

“ adjustable feet and nuts ” may be applied to the back of the pedestal. “ An ordinary chair back may be fitted to the seat.”

[Printed, 8d. Drawing.]

A.D. 1855, February 2.—N^o 250.

RITCHIE, GEORGE. —“ Improvements in beds or mattresses ” to be used on the ground or on damp surfaces. The portion which is placed on the ground is made of a waterproof material; the portion next to the sleeper is of ticking “ woven double in the “ loom to receive the stuffing,” or sewn into a number of transverse compartments. The stuffing is ground cork, or hair, or fibrous substance. The waterproof portion is wider at the upper part, “ that it may enclose and overlap the other parts when rolled “ together;” it extends all round beyond the edge of the woven part, and in some cases sufficiently to form a “ complete wrapper “ for the person.” Straps and buckles are fastened to the wider part. The head of the woven part is not stuffed, but left open for a pillow. Sometimes a hood is applied to the head; this may be done in various ways. For hospitals and for cots “ it is unnecessary to have more than one inch or so of margin.” One of the woven surfaces may be coated with a waterproof substance.

[Printed, 8d. Drawing.]

A.D. 1855, February 5.—N^o 273.

DAFT, THOMAS BARNABAS.—“ Improvements in the manufacture of beds or surfaces to recline or lie on.” The bed is composed of a series of tubes of india-rubber or gutta percha, or compounds of these substances, arranged sometimes vertically, sometimes horizontally. The patentee describes the method in which he makes the article required from sheets of prepared rubber “ but previous to applying heat :”—the sheets are cut into strips and worked up upon tin pipes, sometimes round, sometimes hexagonal, of suitable length, say, from two to four inches.” These being coated with india-rubber, are placed vertically on a flat metal plate (which has been previously covered with a sheet of prepared rubber “ of fully the size ” of the required article), “ forced into “ contact with each other, and then submitted to the proper heat “ to produce the ‘ change,’ and the whole will be found to adhere “ firmly together.” The tin pipes are then removed “ leaving a “ cellular or honeycomb fabric.” By a similar process a bed

and pillow may be made all in one piece; the pipes for a bed are "two and a half inches deep and one in diameter, and they are coated to a height of two inches; the pipes for a pillow are five and a half inches deep and coated "to within half an inch of the top edges." To prepare beds "for attachment to bedsteads" pipes of brass are employed in lieu of tin, and their surfaces are cleaned by an acid or by any of the usual processes; but," says the patentee, "I place these on the outside edge of the bed all round, so that a bedstead having cylinders to correspond with these would receive them, and when converted the brass cylinders will be found to be firmly attached to the rubber." If the cells are to run horizontally, the coated pipes are placed in that direction, the rubber or gutta percha surfaces are forced into contact with each other, and the change is produced as before.

[Printed, 4d. No Drawings.]

A.D. 1855, March 3.—N° 481.

ILES, CHARLES.—"Improvements in the manufacture of tubes, knobs, and handles of doors, rollers of castors, and reels for cotton and thread." The external surface of these articles and of pillars and legs of tables "or other articles of furniture wherein is employed a tube of metal" is coated with one "of the hard cements produced from plaster of Paris or gypsum, either plain or colored," Keene's cement being preferred. When imitations of veined marbles are desired, they are prepared by combining fibres of silk, cotton, &c. with the cement; "these fibres are mixed with the cement in like manner to that in which hair is mixed with mortar," as is described in the Specification of Letters Patent granted to Mr. Iles on the 26th of April 1849, No. 12,587. Metal moulds are preferred; the tube of the pillar, &c. is sustained in the interior, and the cement is run in and allowed to set. The surface is afterwards "finished and polished in a machine." The surfaces of knobs, castor rollers, and reels are finished "by turning and polishing."

[Printed, 4d. No Drawings.]

A.D. 1855, March 9.—N° 532.

BARNETT, FRANCIS AUGUSTUS.—(*Provisional protection only.*)—"An improvement in the manufacture of metallic bedsteads and couches for the use of invalids, applicable to bedsteads and

"couches made from any other material." This improvement is effected by means of an upper frame, which is connected with the bedstead beneath by cranks at each side. The cranks are worked by a handle placed at the foot of the bedstead; they raise the frame sufficiently high "for the introduction of a bed pan" or for re-arranging the bed. A sacking with a hole in the middle is strained upon the frame.

[Printed, 4d. No Drawings.]

A.D. 1855, March 14.—N° 569.

KIDDER, JOHN.—"Improvements in the construction of castors." These improvements consist in "a novel mode of constructing the outer case" of ball castors. The case is formed "with a flat internal surface at the top, which rests on the revolving ball," and with sides either flat or curved in such a manner as to touch the ball only "on the side opposite to its direction of motion," and at a height of (by preference) "about one-fourth of the diameter from the top of the ball." The lower extremity of the case is turned in sufficiently to keep the ball from falling out, or a ring may be sprung in for such purpose below the horizontal diameter. The upper part of the castor may be either a socket or a plate.

[Printed, 6d. Drawing.]

A.D. 1855, March 20.—N° 619.

WHITE, ARCHIBALD.—(*Provisional protection only*).—"Swinging beds which will enable soldiers and others to sleep dry in tents or huts, and occasionally in the open air." Each bed or hammock is swung at each end from a tripod stand, the legs of which are so united at the top each by a pin joint to an iron head that they can be expanded or folded up close together. Near the lower ends the legs are connected by cords or irons, which prevent them "from spreading more than may be desired." If irons are used, each is formed of two pieces united by a pin joint, so that they may fold up with the legs. On the under side of the iron head and between the legs "a hook or an eye or hooks or "eyes" project downwards, and from the top a pin projects which passes through an eye at the end of a pole. This pole, for convenience of packing, is made in two pieces which are joined by ferrules; it must be "sufficiently strong to bear the weight of

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one end of a "bed with a man in it to be swung from the centre " of such pole;" it supports a waterproof sheet which keeps from the hammock any rain that may fall. When more beds than one are to be set up, they can be arranged in such form as the shape of the tent or other place may render necessary, "and so as to " make some of the stands support the ends of more than one " hammock." When used in a tent supported by a centre pole, they may be arranged in a circular form round the pole, one end of each hanging to an eye or hook fixed thereto.

[Printed, 4d. No Drawings.]

A.D. 1855, April 10.—N^o 790.

MONZANI, LOUISA.—(*A communication from Willoughby Theobald Monzani.*)—"Improvements in folding stools and folding " chairs." The stool is composed of two cross frames, one somewhat shorter than the other, so that the top rail of one can fold within that of the other. The seat, of any strong fabric, is fastened at one end to the top rail of the shorter frame, passes over the top rail of the longer, and is made fast to the axis of the frames. The frames are held in any desired position by means of a plate fixed on the axis and a set screw. In a modification each frame is made in two parts, one less than the other, so that the one will fold within the other, and the parts are kept in position by screws, projections, and stops. For a chair a third frame is required, connected to one cross frame by an axis or rod and stopped in position by pins. The fabric forming the seat and back is fastened to the front rail (which is hollowed out in the middle to receive a piece of webbing), and after passing under the back rail ascends to the top of the back frame, where it is wound round a roller. In another modification the back frame is " of " such dimensions as to receive within it when folded the other " two frames." The fabric passes over the back rail, under a rail at the lower end of the back frame, and thence up to the top rail thereof, where it is fastened.

[Printed, 1s. Drawings.]

A.D. 1855, April 11.—N^o 796.

ALDERMAN, JOHN.—"Improvements in the construction of " adjustable couches, chairs, and other similar descriptions of " furniture for invalids." The patentee describes 1, a couch:—

On the ordinary frame is a "rising frame," made in three divisions "connected by joints or hinges and worked by means of " screws and nuts." Round the sides of this frame are elastic bands to which the ends of straps are attached crosswise, the straps being tightened or slackened by buckles. The mattress is divided similarly to the frame, and in the middle division is a hole for a pan; the pillow is "wedge-shaped," stuffed with feathers, "and divided into three separate compartments." The mechanism required for raising the frame or any division is composed of suitably placed right and left-handed screws, traversing nuts, diagonal motion links, transverse rods to which the links are jointed, radial bars, "one on each side of the crutch for the " purpose of moving the whole of the rising frame by one action," revolving levers with friction rollers "which work on inclined " planes or metal surface bearings," and a winch handle for giving motion to the screws. The arm of the couch "is so centred as to " move with the rising frame" and keep its parallel position, and connected to the frame is a reading desk whose stem moves with it. 2, a chair:—This is made with "one action for elevating " or depressing the seat and back and another for raising or lowering the feet," the mechanism being "the diagonal link and " lever motion as employed in the couch." It is also furnished with balance lever handles by means of which it can be lifted and always kept in an upright position. 3, a bedstead, "the novelty " of which consists in a simple mechanical arrangement placed at " the head of the bed," so that the framework on which the bedding rests may be raised or lowered; it is composed of bed-posts, sliding rail frame for bedding, inclined planes "upon which the " frame of the bed may be tilted on either side" through the medium of friction rollers, pulleys attached to traversing nuts, staples to which wire cord is fastened, and a nut and screw movement actuated by a winch.

[Printed, 10d. Drawings.]

A.D. 1855, April 17.—N^o 841.

DEVY, PHILIPPE AMÉDÉE. — (*A communication.*) — "Improve-
ments in the frames of swing looking glasses," whereby two
glasses can be connected therewith, "in order that the back of
the head may be reflected by the upper glass into the lower
glass." The upper glass is mounted on a bar "carried by a

"sliding rod held in an inclined position." Within a fixed slotted tube a rod slides furnished with a projecting stud which moves freely in the slot. A cord fixed at one end to the tube passes round a pulley on the stud, then round a pulley at the lower extremity of the inclined rod, and is made fast to the enclosed rod; this rod is raised and lowered by a handle. "But the cord and pulleys may be dispensed with," and the inclined rod be retained in position by a catch. The lower glass is arranged in the ordinary manner.

[Printed, *sd.* Drawing.]

A.D. 1855, April 18.—N° 860. (* *)

HARVEY, HENRY.—(*Provisional Protection only.*)—This invention consists in the application of cork, either in bark, shavings, or cuttings, to the manufacture of beds, mattresses, pillows, cushions, and seats, with or without waterproof coverings, applicable for military, naval, hospital, travelling, domestic, and other purposes. Also in its use for life buoys, "rafts, and attachees to boats or other vessels;" "boats or other vessels *per se* or as the lining or casing of boats or other vessels," whereby additional safety and buoyancy are obtained.

[Printed, *4t.* No Drawings.]

A.D. 1855, May 9.—N° 1044.

MORRISON, DUNCAN.—"Improvements in the manufacture of metallic bedsteads, sofas, and other articles to sit or recline on." The first improvement consists in fixing at one or both ends of each lath a notched catch, "the lower part of which is to be made in the shape of an inclined plane;" this catch is forced into a slot in the rail. A second "in combining castings with castings or with wrought iron:"—castings, solid or hollow, are made in the usual manner; these and the cast or wrought-iron parts of a bedstead, &c. "are to be put together, and where a joint is to be made a mould is to be formed, and fluid cast iron run in." A third, in making dovetail joints, either by casting them in suitable moulds, or by forging them of wrought iron, and in connecting them to the sides or ends of a bedstead, &c. "by forming moulds in or around such places as are to be made into joints, and pouring therein or thereon fluid cast iron." A fourth, in casting dovetail joints of malleable cast iron in suitable

moulds, "however the same may be attached to the pillars, sides, or ends" of bedsteads, &c.

[Printed, 6d. Drawing.]

A.D. 1855, May 12.—N° 1070.

ROBINSON, GEORGE.—"An improved invalid's bed," and a sling for a "fractured limb." A framework (about the size of the bed), to which is fastened a sheet of tick, canvas, or other suitable fabric, rests on the ordinary mattress. Under the bedstead a longitudinal or transverse shaft, carrying a drum at each end, revolves in bearings by aid of a handle and suitable gearing, and at each corner of the under side of the bedstead and near the top of each of the four posts is a pulley. Ropes or chains pass round the pulleys and are fastened to the drums at one end and to the framework at the other. In the tick is an opening which is closed (when not required for use) by a flap of the same fabric; the flap is buckled or buttoned to one side of the frame. "For raising the trunk or upper part of the body to an inclined position" a roller revolves in bearings "behind the head part" of the bedstead; to the roller is secured one end of a piece of canvas, "of the same width as the bed or hammock, and long enough to reach to the feet or loins." To the other end of the fabric is attached a stretcher, which is fastened "to the top side of the main hammock." This part of the invention can be applied to any bedstead by fastening the stretcher to the under side of the ordinary bed or mattress. The roller is turned by any convenient method. The sling for a fractured limb consists of a framework and canvas; it is suspended by a cord "from the centre beam of the frame" of a bedstead; the cord passes "over a pulley and roller, which roller can be turned by a handle and held in check by a ratchet wheel and catch." "The crossbars of the frame have slots in which the ends of the centre beam are placed, thereby allowing the power of giving a lateral or transverse movement to the small sling."

[Printed, 10d. Drawing.]

A.D. 1855, May 12.—N° 1078.

DRAY, WILLIAM. — "Improvements in the manufacture of frames for all kinds of structures, together with the means of fastening the same when necessary, part of which is applicable

"to the manufacture of screws and bolts." The patentee describes the construction of a bedstead, "premising that the principle of construction will be similar" in other articles. Over each of four tubular uprights "a four-way joint" is slipped and riveted thereto. The arms of the joints are hollow and form sockets for tubular side and end rails. Before insertion a broad piece of sacking is slid over one side and end rail, and two narrow pieces over the others; these are laced together. Hooks are passed over the uprights for the purpose of connecting them by cords to the corners of the sacking; or the parts are secured by "bands of metal provided with hooks and screws which extend from end to end and from side to side." The head is composed of two metal rods having rings and plugs at the ends, and joined by strips of metal hinged to them at top and bottom. For hospitals or for reclining couches a moveable frame is added; it is composed of side bars with rings at the ends to slip over the uprights and with racks on their faces, and of a frame hinged to the other ends of the bars, covered with sacking, and furnished with supports which take into the racks. The screws and bolts are made hollow, threaded, and beat up, cast, or otherwise formed with heads.

[Printed, 8d. Drawing.]

A.D. 1855, May 21.—N° 1138.

RAVENSTIN, LOUIS FRÉDÉRIC ISIDORE, and CHATEL, CHARLES.—(*Provisional protection only.*)—"Improvements in the manufacture of blinds, screens, reflectors, & other articles of a similar nature." The designs required are produced by cutting out corresponding openings in the fabric, which is to form the ground, and covering the openings with fabrics of different colours. "To conceal and ornament the joints of the different pieces," designs are printed upon them with a mordant, "the impression being powdered over with a velvet powder, thus imitating velvet."

[Printed, 4d. No Drawings.]

A.D. 1855, May 25.—N° 1161.

HASELER, EDWIN.—"An improvement or improvements in frames for pictures, drawings, engravings, and other similar articles." Four strips of metal are employed, "having lengths

"equal or nearly equal to the four sides respectively of the drawing to be framed," and "a breadth somewhat greater than that which it is intended the finished frame shall have." The portion of each strip which forms the front of the frame may be ornamented by pressure or otherwise, and the strips are made of a "trough-like" shape before a frame is constructed from them. The drawing is covered with a glass and back board. The strips "are laid upon the glass, and bent round the edge thereof, so as to embrace or enclose the edges of the said glass, drawing, and board." The strips are held in place by corner pieces placed at the angles and in front of the frame. The corner pieces are provided with eyes which are joined together by wires passing across the back of the frame, or by elastic bands, or (in larger frames) by rods carrying right and left-handed screws; or they may be pinned, screwed, or otherwise fastened to the back board. The corner pieces "may be made ornamental, and of metal or other suitable material."

[Printed, 6d. Drawing.]

A.D. 1855, June 1.—N^o 1253.

PEYTON, RICHARD, and STOCKER, ALEXANDER SOUTHWOOD.—"Improvements in the manufacture of bedsteads." This invention "consists in combining wooden pillars, standards, posts, or legs with metal collars or corner pieces winged" for attaching the side and end rails thereto. The post, &c. is made with a shoulder, on which the collar rests; and "the internal form of the eye" of the collar agrees "with the configuration of that part" of the post whereon it has to be fitted. In some cases, "the parallel part of the post" is cut with a coarse thread, and a corresponding thread is cast inside the collar. The wings are dovetailed or otherwise formed to receive the ends of the rails, which may be further secured by a cross pin, key bolt, or screw. The top of the post and the eyes of the cross rails are united by a screw pin and knob. There are drawings of the various shapes in which the eye and wings of the collar, and the top of the posts, may be made, and one of a foot fitted with a castor.

[Printed, 10d. Drawing.]

A.D. 1855, June 9.—N^o 1321.

ROBINSON, JOSEPH.—"Improvements in tables," principally "intended to be applied to tables used in ships," for the accom-

modation of a greater number of persons. The table is divided down the middle, and one portion is provided with an inner flap; under the middle of the table, when closed, a row of seats is fixed. Each portion and its row of seats are mounted on slides, which move on guide rails secured to the floor. In the groove of each guide a roller travels, fixed at the back end of each slide; a stop ensures the closing of the portions in the proper place. Additional pieces may be hinged at each end of the flap; and end pieces may be added to the halves made to slide on rods or bars. If two middle seats are provided, a flap may be hinged to each half. The top back rails and arms of the seats move on centres so as to incline either way.

[Printed, 10*d*. Drawing.]

A.D. 1855, June 11.—N° 1328.

KIND, JOHN DAVID.—“An improvement or improvements in “spindles for locks and latches, and in attaching knobs or handles “to the said spindles.” The ends of the spindle, either cylindrical or square, are cut with a thread and slit longitudinally. The knobs are cut with a corresponding thread and screwed on; a pin is passed through the neck of the knob and through the slit. Or one knob only may be secured in this manner, and the other by sliding it over the spindle end, and by passing a screw or cotter through the neck and the spindle. Teeth and notches may be substituted for the screw threads.

[Printed, 6*d*. Drawing.]

A.D. 1855, June 18.—N° 1379.

RÉAL, LOUIS HENRI.—“Improvements in elastic bottoms or “seatings for beds, mattresses, and seats.” The frame of the bedstead is joined to the head and foot posts by screws; “which “may be made to serve as hinges.” In a bedstead for one person, the laths are connected rigidly to one side of the frame by split links, and to the other side by spiral springs. A “double hook” passes freely through each spring, “for the purpose of preventing “it from being drawn out beyond a certain extent;” the spring is united to the frame by one end of the hook, or by a clamp or link. In double bedsteads the laths have a spring at each end; they are also fastened at their middle “to a central longitudinal “bar.” “Expanding laths” consist of two parts, each slotted;

one part slides over the other, and a double hook "is fitted in "the adjacent holes of the two parts;" sliding ferrules prevent the parts from slipping. When such laths are used, the top and bottom of the frame, and the pieces composing the head and foot boards, must be made to expand; they are each made in two parts; the expansion of the former is regulated by a screw, the latter expand similarly to the laths.

[Printed, 10d. Drawings.]

A.D. 1855, June 19.—N^o 1400.

LETCHFORD, JAMES.—"An improved construction of folding "bedstead." The sacking frame is made in two equal parts, and jointed to a bed frame, so that the whole can be folded up "into two thicknesses;" the bed frame is provided with stops, "which will prevent the bed from swaying in the direction of its "length." Two legs support the bedstead at the middle where the frames are jointed, and four others at the corners; all fold within the sacking frame, and when let down bear against studs. The head frame is jointed to the side rails and prevented from falling down, when raised, by square projections; moveable pins will answer the same purpose. Bent stretchers increase the rigidity of the frames. The sacking is tightened by a cord and two rows of eyelets; but instead of sacking metal laths may be employed, riveted at both ends to the side, head, and foot rails, and at the points of intersection.

[Printed, 10d. Drawing.]

A.D. 1855, July 7.—N^o 1527.

WERNER, CHRISTIAN FRIEDRICH, and PIGLHEIN, LOUDOVICUS.—"An improved manufacture of elastic stuffing for chairs, "couches, and other articles requiring the same." The stuffing is made from "bast," by preference of the linden tree; it is subjected to a combing machine, washed, and dyed; it is then twisted into a kind of loose rope and kiln-dried, "by which process the "fibres will be set in a curled or twisted form;" the rope is next untwisted, and the fibres are fit for use. The patentees claim only the employment of bast for stuffing; not the processes of preparation.

[Printed, 4d. No Drawings.]

A.D. 1855, July 20.—N° 1641.

WHITE, ARCHIBALD.—(*Provisional protection only.*)—"Swinging beds and covers and tents, to enable soldiers and others to sleep off the ground and dry with or without an ordinary tent." The patentee describes two arrangements; one he calls "first modification for sixteen men;" for this are required, 1, four tripod stands of wood or metal piping, having the legs so jointed at top that they can lie close together when not in use; 2, two rectangular frames (one placed above the other) of wood or metal piping, "about eight feet long by about six or seven wide," supported at each corner by one of the stands, and in the middle of each side by a leg "hung by a joint," and set "at an angle of about 45° with the horizon;" 3, a tent pole in the middle of the frames, and having attached to it cords to support a waterproof cover; 4, a cap, "formed of a frame covered with waterproof cloth, to be placed on the top of such pole a few inches above the part to which such cords are attached;" 5, frame stretchers (if required), so jointed to the pole that "they will turn vertically on such joint," and lie when packed close by the side of the pole; 6, stakes to drive into the ground under each tripod, and having attached to them cords or straps whereby to steady the lower frame; 7, "six hammocks to be swung across each frame, by so attaching one end of each hammock to one of the eight feet sides of the frame, and one end of the same hammock to the opposite side of the same frame, as that the cords by which it is attached will slip freely from the end to the centre of such frames and back again, and one hammock to be swung from the under side of and in a line with each of the same sides of the frames." All the legs are to be made with ferrules and forks; and the frames and tent pole to be so constructed as to be packed into the smallest compass; a description is given of their construction, and of the mode of fastening the tent cords. In the second modification or arrangement, each hammock is supported at each end by a tripod, "much smaller and lighter" than the above, and is kept extended from head to foot by a stretcher of wood or metal piping. The hammock is to be formed of a waterproof great coat or cloak and a cape, carrying a ring or hook at each end for attachment to a tripod, and pieces of wood or small metal piping may be required "to be placed one at each end of and across each hammock to keep

"the ends apart." The tent pole is either of wood in several pieces joined by ferrules or of piping, one end slipping into the end of another piece, "each of such pieces being so formed as that any of such pieces of any pole will when required form a tent pole with any other of such pieces of any other similar tent pole." The tent covering is composed of several pieces of waterproof cloth, furnished with rings and strings, or buttons, or hooks and eyes; each piece serves as a cover for a hammock, as well as for part of a tent cover. There are also necessary pieces of small cord "of sufficient length to reach twice from the top of the tent pole to the ground, and tie to the outside legs of the tripod stands," or to pegs to be driven into the ground. "The intention in this second modification of the beds is that each man shall carry his own bed, bedstead, and portion of tent."

[Printed, 4d. No Drawings.]

A.D. 1855, July 26.—N^o 1695. (* *)

BEATTIE, JAMES.—"A combination or contrivance of a folding mattress (with or without a tent attached), hut, ambulance for conveyance of wounded or sick persons, pontoon, raft, and boat, portable cistern, and bath."

It consists of "a mattress made in five compartments or divisions, that is to say, one centre piece, which may be subdivided, two side pieces and two end pieces, all connected in a manner to allow of its being adapted to the required forms for the several purposes above mentioned." The materials used in the construction and manufacture of the cases or coverings, both external and internal, may be canvas, or any other material or substance capable of being rendered waterproof; and the stuffing may be of any substance or fibre having the qualities of lightness, elasticity, and buoyancy.

[Printed, 10d. Drawings.]

A.D. 1855, July 26.—N^o 1702.

DAWSON, THOMAS.—"Improvements in bedsteads, couches, and other like articles of furniture, whereby parts thereof can be made to form a fire-escape when required." The side frames consist each of a tube which encloses several smaller tubes stopped so as "to prevent their being drawn entirely out of one

"another." A sacking supported on laths hangs loosely upon rings between the frames. Two guide rods are fixed to the foot legs and rest in mortises in the head legs; two others pass through mortises in the foot legs. A cross bar is connected to the ends of the latter guide rods and to the lower ends of the side frames. A link unites "the last and smallest tube in each series of tubes" to the axis of the upper of two rollers placed between the head posts. Round the rollers is wound a rope fastened at one end to the cross bar. The axis is provided with a handle. The foot of the bed being wheeled to a window, the head posts are pushed forward, the cross bar together with the ends of the side tubes is thrust out of the window and lowered by unwinding the rope. The persons descend in the sacking. Or the upper half of the foot or head posts may be made to consist of telescopic tubes, "the smallest one jointed at the end, or made to work on a swivel, and fitted to the lower half of the posts." These tubes may be applied to form the sides or ends of other articles of furniture, and rollers may be dispensed with "when the rope or chain connected to the ends of those tubes which are to reach to the ground may be let out by hand."

[Printed, 6d. Drawing.]

A.D. 1855, July 28.—N° 1719.

HYDE, JOHN.—(*Provisional protection only.*)—"Improvements in furniture castors." Improvement 1. The wheel is connected to the socket in which the pivot works by means of pins or points cast with or otherwise fixed into the socket." The pivot is formed "with a conical projection or shoulder, over which the above-mentioned pins or points are bent or turned after the pivot has been placed in the socket." 2. The castors, as above described, are constructed "with a loose collar or washer, or two or more of such said collars, upon and against which the socket of the castor rests when in use." The end of the pivot upon which the socket bears "is formed pointed." As a further improvement, the pivot is formed with the point downwards, "the end thereof bearing upon the bottom of a hole formed in the forked piece which carries the ball." 3. This consists in the employment "of a hollow pivot or long collar passed over the ordinary pivot," both being pointed at the top; or two or more short collars may be used, "one in the form of a cap to

"receive the upper end of the ordinary pivot." 4. It is proposed, in some instances, to use the foregoing improvements in combination with antifriction wheels, connected either to the horns or "to a loose collar placed in the socket of the castor above the ball thereof;" in the latter case, "an inverted pivot" is fixed "into the top of the socket," and a conical recess is made in the top of the collar "to receive the conical end of the pivot." 5. Instead of forming the top of the pivot pointed, it is proposed "to make the end of the pivot flat, and form a recess therein to receive an inverted point formed in the end of the socket;" or the top of the pivot may be round, "and the bottom of the hole in the socket flat."

[Printed, 4d. No Drawings.]

A.D. 1855, July 28.—N° 1721.

BROWNFOOT, WILLIAM.—(*Provisional protection only*).—"A new or improved instrument or apparatus for raising, lowering, and adjusting blinds, maps, and other such like articles." A ratchet wheel is fixed to the drum of the roller "on which the blind cord is coiled on the descent of the blind." A weighted arm is connected to the pawl of the ratchet, so that, when it hangs vertically, the pawl is disengaged, but when moved horizontally it presses the pawl against the ratchet and arrests the blind. The cord hangs down behind the lower end of the arm and acts upon it "by moving it somewhat into the room."

[Printed, 4d. No Drawings.]

A.D. 1855, August 3.—N° 1763.

BETJEMANN, HENRY JOHN.—(*A communication*).—"Improvements in extending tables." The mechanism consists, 1, of slides furnished with racks on their under side, with grooves having fixed stops therein, with notches, and (except the first) with self-acting lever catches formed with a curved end in front, a projection behind it, and an incline at the back end; 2, of an axis supported in bearings on the under side of the stationary end of the table, and provided with a handle and pinions (two for every two slides) "of sufficient width to take into and gear with two of the racks;" and 3, of a ratchet wheel fixed on the other end of the axis, and a pawl moved by a lever. In extending the table the stop of the first slide, coming into contact with that of the

second, draws it out, "and brings its rack into gear with the pinion." The projections force the curved ends of the clicks or catches into the notches. The inclines disconnect the curved ends when the table is being contracted. The ratchet and pawl are to hold the table firmly together. The handle, "which is made "capable of sliding along the axis," is supported when not in use by a spring catch underneath the table top.

[Printed, 1s. 4d. Drawings.]

A.D. 1855, August 3.—N^o 1764.

RITCHIE, CHARLES, and RITCHIE, GEORGE.—(*Provisional protection only.*)—"Improvements in preparing cork and other "materials for stuffing." The cork is ground together with hair, wool, cotton, or other fibrous substances, and thus thoroughly blended and mixed with them. Different processes, however, may be employed.

[Printed, 4d. No Drawings.]

A.D. 1855, August 8.—N^o 1792.

PYCOCK, BENJAMIN WILLIAMSON.—(*A communication.*)—"Improvements in curtain fixtures." The tassel at the lower end of the curtain cord encloses a small box or hollow piece having apertures at top, bottom, and one of its sides. Inside the box is pivoted a cam lever whose tail passes out at the side aperture, and to which the end of the cord is attached. Another cord passes through the box and is fastened at each end to the window frame. The point or curved part of the cam presses against this cord, and "clamps or pinches it against a stop or pin," thus holding the box and the curtain at any required height. The curtain "may be made to run down by itself by weighting its "lower end." A small spring may be placed under the lever "to throw it up more suddenly."

[Printed, 6d. Drawing.]

A.D. 1855, August 9.—N^o 1801.

COOKE, EDWARD.—"An improvement or improvements in "moulds used in casting certain parts of metallic furniture," namely "the corner blocks and other cast pieces of metallic bedsteads and other articles of metallic furniture, such as chairs, "sofas, and couches." The moulds or stocks "consist of two or

"other number of dies connected together by hinges or otherwise;" they are made "to embrace the pillar or rod or part on which the block or other piece is to be cast." They are cast in metal moulds, thereby rendering the finishing "by filing and other manual processes" (which is required when they are cast in sand) unnecessary, as they are "sufficiently true for use without the usual finishing and fitting." To make a mould or stock, a die or mould is formed which "has an internal figure corresponding to the external figure" of the required one; a model of the ornament to be cast, "made of a material not injuriously affected by the heat to which it has to be exposed," is fixed upon a plate which is laid "against the face of the mould;" a second plate is placed "against the plate," and the three parts (the mould and the plates) "are bound firmly together by screws or otherwise." Fused cast iron is poured down a channel in the lower plate; it rises through a channel in the upper plate, and "fills the interior of the mould." On taking the mould to pieces "the casting occupying the interior of the same constitutes the stock or mould."

[Printed, 6d. Drawing.]

A.D. 1855, August 10.—N° 1820.

INNES, GEORGE ROSE.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in raising and lowering rolling blinds." A groove is cut the entire length of the roller, and a lath of hard wood or metal secures the edge of the blind in the groove. The pulley on the roller is "somewhat broader than those now in use, and has a deep broad groove cut in its periphery." The lath enters slightly into the side of the pulley, "being kept in that position by a cap of metal or wood on the opposite end of the roller." A spring is placed between the pulley and the bracket to maintain the roller in position.

[Printed, 4d. No Drawings.]

A.D. 1855, August 13.—N° 1832.

GREGORY, WILLIAM JOHN.—"Improvements in the construction of camp furniture." The patentee describes first a folding bedstead convertible into a couch or easy chair; it is composed mainly of three frames jointed together, the middle one being supported on legs mounted on castors, the head and foot ones on

folding legs. To the head frame is hinged a jointed frame, the upper joint when extended serving to carry a canopy, and held up by struts. The head frame is maintained in a vertical position by short struts, "which take into notches near the inner end." Reversible arms are connected to the middle frame by pins, and to the head frame by slots and buttons. Secondly, a case in which the bedstead may be packed up, and which is convertible, part into a closet, part into a table:—The case is rectangular, the bottom and sides of the lower half being braced together by corner pieces. Two moveable sides are fitted on to the top of the fixed sides and secured by bolts. A back and front are hinged to the fixed back and front and provided with a lock. The top is closed by a moveable lid, and legs being screwed to the lid, it forms a table. The moveable sides, being taken off and placed inside on ledges, form shelves; and the bottom part being turned down on to one of its sides is used as "a roomy lock-up closet," the back and front serving as doors.

[Printed, 1s. 2d. Drawings.]

A.D. 1855, August 22.—N° 1902.

PITT, WILLIAM, and DAVIES, EDWARD TURNER.—"Improvements in the manufacture of cornice poles and picture rods, and in rings and chains to be used in connection therewith." These articles are made of zinc; for cornice poles and rods it is formed into a tube; the edges are brazed together or "left merely butt-jointed," according to circumstances. For rings the tube is rounded, and the eyes are riveted through; for chains the links are stamped out of sheet zinc. All are coated with brass; and if a higher degree of colour is required, they are afterwards electro-gilt.

[Printed, 4d. No Drawings.]

A.D. 1855, September 1.—N° 1972.

WINFIELD, ROBERT WALTER, and JACKSON, JOHN.—"Improvements in metallic bedsteads and other articles of metallic furniture." The first part relates to a method of connecting rails to pillars. On each pillar is cast a conical block with two fins; on the end of each rail is cast a block with a dovetail which engages with a fin. "The vertical face of each block in which the dovetail is made" is so constructed that, when the blocks

“ meeting in the same pillar are in their places,” their inclined ends abut against each other. Or a dovetail may be formed in the block at the end of one rail and a fin on the block of another rail, and when the rails are joined, a pillar having a conical block on it is passed “ through a hole in the engaged corners.” The second part refers to the formation and junction of the laths; these are permanently jointed at one end to a rail, the other end being capable of ready attachment. Or they may be made in two or more portions jointed together; in which case they are permanently attached at both ends to the rails.

[Printed, 8d. Drawings.]

A.D 1855, September 17.—N° 2092. (* *)

LEWTAS, JOSEPH.—“ Improvements in apparatus for holding “ and letting-go cords, chains, or bands.”

This invention “ consists of a combination of a moveable or “ travelling roller or block, having its ends or the ends of its “ axle mounted and working in slots slightly curved at their “ lower ends, and a fixed plane or surface, against which the roller “ or block, moving with its ends or the ends of its axle along the “ slots, may, as required, be caused to approach towards or recede “ from the fixed or holding plane or surface, for the purpose of “ pressing against and holding a cord, chain, or band, or for the “ purpose of releasing it; the slots and the fixed plane or surface “ being placed at a proper angle relatively to each other for effecting “ those objects, so that a cord, chain, or band passing between the “ roller or block and plane or surface may be held fast or let go “ at pleasure.”

The invention is described as being applied to apparatus for holding and letting go the cords of window blinds; but the patentee states that by “ increasing or varying the dimensions of “ the parts, apparatus of the same kind may be used for holding “ and releasing the cords, bands, or chains of machinery, the “ teagles of warehouses, and for other purposes.”

[Printed, 8d. Drawing.]

A.D. 1855, September 24.—N° 2136.

SIMMONDS, GEORGE.—(*Provisional protection only.*)—“ Im- “ provements in the construction of bedsteads.” In the posts vertical slots are cut to admit plates of iron which are locked into

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each other. The ends of the plates project and form bearings for the rail ends; these have riveted on the under side loops to receive the projections. Lateral holes are bored through the rails and projections and tapped for thumbscrews. At head and foot are metal plates fitted into grooves, or otherwise attached to the posts. The laths (of metal) are secured to the rails by bolts which fit tightly into holes in both. Lateral holes are bored through the bolts "to receive a wire which acts as a key." If sacking is used, loops are riveted to the inner edge of the rails, and metal rods are threaded through them and "through notched" hems made in the edges of the sacking.

[Printed, 4d. No Drawings.]

A.D. 1855, September 26.—N° 2149.

HILLES, MALCOLM WILLIAM.—(*Provisional protection only.*)—"An improved construction of rack for window blinds." The rack teeth are formed "on the inner surface of the overlapping sides;" at each side of the pulley carriage is a pin; the contact between the pins and teeth "will be preserved by reason of the spring affixed to the back of the pulley carriage bearing against the smooth back plate of the rack."

[Printed, 4d. No Drawings.]

A.D. 1855, September 29.—N° 2174.

MARTIN, WILLIAM NEUFVILLE.—"Improvements in the construction of folding and portable crates, boxes, baskets, packing cases, and huts." The sides of the crate or box are made "each in two parts hinged in the middle." The various parts are so hinged together that the whole may be folded as follows:—The top falls outwards on to the back; the bottom turns upwards against the front; and the sides fall inwards. In a modification the sides fold together diagonally and the top and bottom shut down upon the sides. The parts are secured when in position "by hooks and eyes or pins and cotters." For "military and travelling" purposes, the top and bottom are separable from the sides, sliding in grooves; thus the box may be straightened out to keep a bed off the ground. Moreover it may be adapted for a chair and table, "the seat being formed by a partition in the case, sliding in grooves like the top and bottom, and a moveable prop supporting the fourth angle of the table." The

framework of a hut may be covered with felt, &c., "a door being left in the centre of the side." The parts are so hinged together that the ends open in two flaps, falling back on to the sides; the gable pieces, dividing in the middle, turn back on to the roof which "is then allowed to fall inwards on the ridge, and the whole closes together like a screen."

[Printed, 1s. Drawings.]

A.D. 1855, October 2.—N° 2199.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—"An improved mode of constructing elastic bed bottoms, applicable also to sofas, settees, and other seats." Elliptic springs are attached to the slats "about one-third way from their extremities," or at any convenient point when the slats are short; the other ends of the springs are suspended from spiral springs which are hooked to staples in the side rails. The spiral springs may be dispensed with, and the elliptic springs behooked directly to the rails. For ships' berths the springs may be made to cross each other, the slats being curved.

[Printed, 6d. Drawings.]

A.D. 1855, October 4.—N° 2219.

HAMILTON, WILLIAM.—(*Provisional protection only.*)—"Improvements in the construction of tables, chairs, sofas, and other articles of furniture," especially useful on shipboard, for tents, &c. The legs are screwed to a base; they are made with one or more rule joints so as to fold down on the base, and are secured when in position by pins or clips. The table top, seat, &c. is screwed to the leg tops; the backs of chairs, sofas, and bedsteads are hinged; the legs when not wanted are folded, and "the whole sunk flush with or below the floor," suitable pieces of wood being made "to fit the apertures left in the floor." The legs may be telescopic and retained when extended by pins or other means.

[Printed, 4d. No Drawings.]

A.D. 1855, October 5.—N° 2231.

WREN, ELIZA CAROLINE.—(*Provisional protection only.*)—"An improved construction of child's cot," whereby it "may receive

" from the attendant a gentle up and down motion." The cot is suspended from springs which are connected to the cross bar of the framing. "The vertical rods which carry the cross bar form also guides, on which lugs attached to the opposite ends of the cot work up and down." A treadle, working on a fulcrum at the foot of the framing, is connected by cords to the bottom of the cot.

[Printed, 4d. No Drawings.]

A.D. 1855, October 15.—N° 2305.

BROWN, JAMES MILLER, and BROWN, THOMAS.—"Improvements in the manufacture of folding chairs." The fabric which constitutes the back and seat of the chair is fixed to the top rail of the back frame and to the front rail of the seat frame; these two frames cross each other and the arms are pin-jointed to both. The back frame is in two portions pin-jointed, and the upper one may be made "to assume a more upright position" than the lower one by means of pins and "an extending portion." The seat frame also is made in two parts hinge-jointed so as to admit of folding. The inclination of the back frame may be varied by moving a pin through a hole therein into different holes in a projection on the seat frame.

[Printed, 8d. Drawing.]

A.D. 1855, October 19.—N° 2341.

SMITH, JOHN.—"Improvements in the construction of bedsteads, such improvements being also applicable to carriages, ambulances, and other articles." The rails and cross bars of the bedstead head are arranged "to furnish convenient resting places" for laths or springs of lancewood, which project behind the rails at the upper end, and rest "in notches, slots, or tenons in the foot end." Or the upper ends of the laths may rest in loops fastened to the head part. "To secure uniformity of motion" the laths may be placed on a sheet of ticking or sewn between two sheets. They may be applied to all articles for reclining upon, and even to railway carriages; a spring is "placed below the carriages at each side of the same, so as to link or connect them together."

[Printed, 10d. Drawings.]

A.D. 1855, October 27.—N° 2402.

GEYELIN, GEORGE.—(*Provisional protection only.*)—"An improved construction of perambulator," so that it can be converted into a rocking chair. This object is accomplished by mounting the body of the carriage on a pair of rockers and by fitting wheels thereto "by means of clamps or other analogous contrivance which will permit of the ready application and removal of the wheels and axles." The propelling handle also is connected "temporarily" to the body of the carriage. "When the wheels are removed, the perambulator will be converted into a rocking chair; and when provided with a double body, it may be employed as a substitute for a rocking horse."

[Printed, *4d.* No Drawings.]

A.D. 1855, November 1.—N° 2437.

MILNER, GEORGE.—"Improvements in the manufacture of bedstead bottoms, part of which improvements are applicable to various other purposes for commercial and domestic use." This invention relates to a peculiar method of lacing flexible or elastic bands (chair web is very suitable) "in the continuous manner of trellis or lattice work," to serve as sacking for bedsteads either of wood or iron. Staples, "made of wire, size No. 8, tinned iron wire by preference," are fixed into the side and head and foot rails. For a bedstead four feet six inches by six feet six inches eight staples are required on each side, and six at each end, or nine on each side and five at each end, and they are to be placed "at equal distances apart from each other, and one half that distance from the inner corners or angles of the frame." The lacing properly managed will finish where it began, and the two ends of the web are united by a double tongued buckle. "In very large size bedsteads, where it may be very desirable to gain great additional power of tightening up," at certain intersections of the band metallic eyes are placed, "through which the band passes and returns at an angle of about 90°," and at other intersections "two equilateral triangular metallic eyes, with a bar parallel to one side of each eye, over which the band passes and returns at an angle of about 90°." The tightening is effected by lines which entwine the triangular eyes (three in opposite direc-

tions) and connect them to a projecting metallic eye attached to the frame of the bedstead. Sometimes india-rubber eyes are employed in lieu of metallic eyes; they consist of an india-rubber tube with a metallic eye on each side; the method of making them is described. Sometimes a pin "similar to the tongue of a harness buckle" is attached to the staple, so that the band can be passed under the staple and over the pin. For a berth a frame with this lacing can be secured to "the woodwork of the ship," or the band "can be laced to fittings attached to the woodwork." Sometimes the web is cut and two double buckles are used.

[Printed, 10d. Drawings.]

A.D. 1855, November 2.—N° 2449.

OSBORNE, MARK.—(*Provisional protection only.*)—"Improvements in metallic bedsteads and other articles of metallic furniture." The posts and rails are tubular; each post is passed through a corner block, and the two are united by a cotter. On two sides of the block are pieces "having the form of the convex part of a union joint;" on each end of the rail is a flange, and upon each end is slid a piece having the form of a concave part of a union joint; by screwing the two parts together the flange "is grasped between them, and the said rail is secured to the corner block." The laths are formed at each end with a piece "having a semi-cylindrical or hook-like form," which surrounds the upper half of the rail; a pin on the under side of each hook enters a hole in the rail. The ornamental corners at head and foot are cast with female screws, and the rods forming the head and foot rails are screwed into them. The middle rods "pass through the ornamental casting, and are fixed therein by cotters."

[Printed, 4d. No Drawings.]

A.D. 1852, November 2.—N° 2452.

STAUFEN, WERNER.—"A substitute for hair and other substances commonly employed for stuffing cushions, furniture, and other articles." The substitute is Mexican grass from which "the bark or outer portion" has been removed. The grass may be dyed to give it the appearance of horse hair; it is dried and hardened by being passed through a machine "such as is

"commonly employed for glazing calicoes;" it is next twisted or curled and then steeped in cold water "until it becomes soft to the touch;" it is again dried, "by which it acquires the desired elasticity" and is in a fit state for use as stuffing.

[Printed, 4d. No Drawings.]

A.D. 1855, November 7.—N° 2512.

BETJEMANN, HENRY JOHN.—(*Partly a communication.*)—"Improvements in expanding or extending tables." The table stands on a single pillar; the top is divided into two parts which are caused simultaneously to recede from each other by means of slides moving between guides fixed to the pillar. The motion is given by means of toothed racks on the under side of the slides and pinions on two or more axes which are turned by a cranked key or handle. Legs are hinged to the under side of the two parts and so acted upon that as the table is expanding they descend, and as it is contracting they are lifted up so that their lower ends "come towards each other and over the pillar." In the middle part and between the slides "a space is arranged under the ordinary surface of the table" for the reception of the leaves one on the other when out of use. For the mechanism for lowering and lifting the legs "it is preferred to use arms and connecting links to the slides, together with stops and catches; or racks and toothed sectors may be employed with the slides;" both methods are detailed in the Specification. The mode by which the slides are drawn out and in, and their stops, spring catches, &c. &c. have been described in the abridgment of the Letters Patent granted to Mr. B., dated August 3rd 1855, No. 1763; the description is repeated in the Specification. Sometimes the extra legs are fixed to the two divisions, or they may be arranged to fold by hand. "The upper surface of the table might be in three parts, and the central one fixed above the pillar or support, and the other two arranged capable of being moved in opposite directions."

[Printed, 3s. 10d. Drawings.]

A.D. 1855, November 9.—N° 2522.

GOODMAN, GEORGE BARRY, and WEBSTER, GEORGE ALFRED.—(*Provisional protection only.*)—"Improvements in apparatus for reflecting the back, front, and sides of the

"figure and head in a mirror or toilette glass at one view." One, two, or more mirrors swing on uprights which "are connected to each other, and are fitted to another upright or pole." This pole passes through one or more rings or tubes provided with screws or catches which press on it and sustain it at any elevation. "The poles may also be regulated in their elevation by means of weights or other appliances." The rings or tubes are attached to a chair either permanently or temporarily.

[Printed, 4d. No Drawings.]

A.D. 1855, November 16.—N° 2589.

PEYTON, EDWARD, and MORRISON, DUNCAN.—(*Provisional protection only.*)—"Improvements in manufacturing parts of metal bedsteads." This invention consists in "employing castings of brass for the purpose of connecting the parts of brass bedsteads," and in "using heated cast-iron moulds for casting the ornamental parts, also parts of castors, and other parts of bedsteads when of brass."

[Printed, 4d. No Drawings.]

A.D. 1855, November 23.—N° 2644.

ELLISDON, JOSEPH.—"Improvements in 'castors' for cabinet furniture." On the under side of the socket or plate (as the case may be) is formed "an inverted truncated conical projection to ensure greater strength of metal to support the fixed spindle." This spindle is made with a collar which abuts against the bottom of the projection, and with a shank above which projects upwards through the centre of the cone into the inside of the socket (or upper side of the plate), where it is "securely rivetted." Below the collar "a vertical tapered axle is formed," upon which a short horizontal arm is fitted so as to revolve thereon. Through the rotating arm a stout pin is passed, projecting sufficiently on each side to serve as axle arms; on them are mounted two wheels "which roll upon the floor parallel to each other." The axle arms "project slightly downwards to cause the wheels to keep well up towards their inner bearings," and "to bring the soles of the wheels closer to each other." If "extra large rolling wheels" are required, a cranked axletree is used to mount them on, thereby avoiding "unduly raising the furniture to which they are applied." To secure the wheels

the thickness of the extreme ends of the axle arms is slightly reduced so as to form a shoulder; a washer is then slipped on and riveted down; the rotating arm is secured on the spindle in the same way. The spindle and socket (or plate) may be made in one piece; so may the rotating arm and the axle; but the patentee prefers the construction described above.

[Printed, &c. Drawing.]

A.D. 1855, November 27.—N^o 2672.

PEYTON, EDWARD, and MORRISON, DUNCAN.—“Improvements in the construction of metallic bedsteads and other articles to sit or recline upon.” To the improvements stated in Abridgment No. 2589, and dated 16th November 1855 (when provisional protection was granted to the patentees for this invention), there is now added “applying twisted tapering metal tubes in the construction of parts of metal bedsteads and other articles to sit and recline on.” These tubes are ornamented “in the manner known in the trade as twisted,” and the patentees prefer to use such tubes to form the pillars or legs rather than the customary “parallel tubes.” To connect the parts of brass bedsteads by means of brass castings, “the connecting piece is moulded in sand or otherwise, or metal moulds may be used,” and the parts to be connected are placed “so that their ends project into the mould;” melted brass is then run in. The cast-iron moulds mentioned in the abridgment “are heated when about to receive the melted lead, by preference to about the temperature of melted lead.”

[Printed, &c. No Drawings.]

A.D. 1855, December 5.—N^o 2734.

NUNN, WILLIAM.—“An improved table, washstand, mirror, &c., combined in one piece of furniture.” A cheval glass is placed at the back of a toilet or other table, the upper part appearing sufficiently above the table to answer the purpose of a dressing glass. Parts of the table can be removed from before the glass, or the glass can be drawn from behind the table “by means of slides, hinges, screws, &c.” The table is made with a drawer containing a basin “with valves, cocks, pipes, and all necessary appurtenances, the same provided with elastic pipes for the supply and waste water,” a reservoir, and a cistern for the waste

water. The patentee makes also, 1, a washstand in connection with the dressing table without the cheval glass; 2, "parts of the afore-said improved table and apply them to cheval glasses;" 3, a cheval glass in connection with parts of the table, so that "when turned glass side downwards" the back shall form a table top; and 4, a table such that, when the top is turned up, the under side "shall contain a mirror, and form a toilette table or cheval glass, or both."

[Printed, 8d. Drawing.]

A.D. 1855, December 15.—N^o 2838.

TWIST, SAMUEL.—(*Provisional protection only.*)—"Improve-ments in casters for furniture and other purposes." The castors are made "capable of adjustment to suit uneven surfaces," by fitting on the foot of a table or other piece of furniture a cap (of metal if preferred), round which a screw is turned. "The socket of the castor is also tapped in the inside with a female screw, and the foot of the table thus screws in the socket," so that that leg of the table can be raised or lowered. "In some instances it will be sufficient to turn a screw upon the foot of the article, or to fix a screw upon such foot, which will work in the tapped socket of the castor without the cap before named."

[Printed, 4d. No Drawings.]

A.D. 1855, December 29.—N^o 2948.

BIRCH, GEORGE ROYDS.—"A form and folding desk combined, adapted for the use of schools." Metal ends are fitted to an ordinary form; these ends carry pins which form the hinges of iron brackets "bent nearly at right angles," and having attached to them boards of the same length as the top of the form. "The prolongations" of the brackets catch against projections on the ends, and these combined with stops relieve the strain on the pins when the brackets are turned over to form a desk. Feet are so hinged to the supports of the form that they can be moved towards either the back or the front. Beneath the seat are boxes; the fronts of these, instead of being hinged, are provided with pins "which take into grooves formed in the upper parts of the ends of the boxes." The patentee applies these brackets and boards to boxes, so that they may be used as seats,

desks, tables, and by placing two together a bedstead. The box is provided with cleats for supporting the brackets and keeping them in position. When packed for travelling the board rests on the top of the box, and the brackets pass between the cleats and are attached to the box by screws, which are taken out and used as hinges when a seat back or desk is required. To form a bedstead the brackets are slid down between the cleats.

[Printed, 6d. Drawing.]

1856,

A.D. 1856, January 17.—N^o 127. (* *)

JACKSON, JAMES. — (*Letters Patent void for want of Final Specification.*)—"An improved apparatus for retaining and releasing cords of 'Venetian blinds,' or cords, bands, or chains employed for other purposes."

This apparatus is thus described by the inventor:—

"Upon the top bar of an ordinary Venetian blind I fix a small box of brass or other suitable metal; at one end of this box a swinging wedge is placed, the upper portion of which is provided with an axis or pivot having its extremities bearing in the two sides of the box; this wedge is also furnished with a projecting finger or pin at the opposite end of the box. I employ a cranked lever similar in action to the 'bell crank,' one end having a projecting pin placed so as to lift the pin upon the wedge, and the other extremity, which passes through the end of the box, being provided with a hole so as to allow of one of the cords being passed through. The cords being passed under the swinging wedge, and along the bottom of the box, and one of the cords being placed through the hole in the end of the cranked lever (the other cord passing down the side of the blind), if the cords are now drawn downwards, so as to lift the blind, the wedge will follow the direction of the cord so far as the axis or pivot will allow, and permit the blind to be drawn up; but immediately upon the release of the cord from the hand the wedge will drop upon the cord, and hold or retain the cord between the thin end of the wedge and the bottom of the box. Should it now be desired to release the

“ cord and lower the blind it is only necessary to draw that cord which passes through the cranked lever in an inward direction from the blind, by which means the finger upon the cranked lever will raise the corresponding pin upon the wedge (and consequently the wedge itself), and thus allow the cords to run free until they are stopped or arrested by allowing the wedge again to fall upon them.”

[Printed, 4d. No Drawings.]

A.D. 1856, January 23.—N° 183.

BARNES, ISAAC.—“Improvements in the manufacture of knobs and furniture for doors, drawers, and other similar purposes, parts of which improvements are also applicable to the manufacture of cornice poles and other like articles.” If the article to be made be of a flat form, a plate of glass of suitable shape is thoroughly cleaned, and on its back is stuck by gum or other transparent adhesive agent “illuminated, printed, or embossed and coloured paper or cloth, cut to the same form as the glass.” For knobs and like articles hollow glass knobs are used; the pattern is gummed or otherwise attached to the inside, and the back of the pattern is coated with paint or glue. Or the pattern is secured to the back of “lenses or bull’s-eyes of glass,” which will admit of “cutting the front of the lens into facets to produce greater enrichment;” the lens so prepared is sunk into a metal mount, “in the edge of which it is clipped.” Hollow knobs may have “gilding or other metallic ornamentation” by introducing a gold or other metallic solution and afterwards applying a coat of paint or glue to the back thereof. In making cornice poles and the like “the ornamentation is attached to the surface of a roller of metal or wood, which is afterwards fitted into a tube of clear glass, being secured in its place by a capping at either end.” Door furniture may be ornamented also in the following manner:—The back of a plate of glass (for an article of flat shape) is ground to a dead surface; the pattern is cut upon the back and left “dead without polishing;” it is then colored (or not); the whole back is silvered, and the silver is coated with thin glue; for additional protection thin paper is laid on the surface of the glue. Or the dead pattern may be relieved “by the employment of silver upon a bright ground, giving to the pattern the effect of being raised upon the front surface of the

"plate." Knobs to match these plates are of the lens form, having the flat side treated in the same manner as the plates, and the effect will be heightened by using silver plated mounts. Again the glass plates may be inserted into a metal mount (which may extend over the entire back surface) "so as to form a rim of metal round each plate, and the screws for attaching the plate to the door or other surface may then be inserted through the mount instead of drilling the holes through the glass."

[Printed, 4d. No Drawings.]

A.D. 1856, January 24.—N^o 192.

JOHNSON, JOHN HENRY.—(*A communication from Jean Charles Leopold Jacob.*)—(*Provisional protection only.*)—"Improvements in air beds, mattresses, and cushions." This invention "relates to an improved fastening" for air beds, &c., "whereby such articles, when inflated, may be kept within certain limits and made to assume the required forms." The upper and under sides are united "by means of short lengths of chains or cords connected at each end either to a nut or to a screw;" the screw "is formed with a large flat head and is passed through the material from the outside," a suitable washer being interposed between it and the screw head; the inner end of the screw passes into or through the nut. Washers "are interposed between the internal nuts and the impermeable material." In some cases a frame or band of wood or metal is fitted internally or externally to the bed, &c. and fastened thereto by nuts, screws, and air-tight washers. For seats or "packing for the insides of carriages," the bottom of the cushion may be a metal plate or board to which the material "is secured by nuts and screws round the edges."

[Printed, 4d. No Drawings.]

A.D. 1856, January 26.—N^o 215.

SPURRIER, WILLIAM.—"A new or improved method of attaching handles to metallic tea pots and other vessels, which method of attachment may also be applied to the fixing of castors on furniture and other like purposes." The patentee describes his invention in the attaching of a non-metallic handle to a tea or coffee pot, adding that the method of fixing castors to articles of furniture does not differ therefrom "in any essential respect." A groove is made around that part of each end of

the handle which is to be inserted into the metal sockets of the pot; in the interior of the sockets is a short tube "slit or notched" in several places," and having the slit ends curved inwards. The ends of the handle are inserted and pushed in with sufficient force to make them open and pass the turned in ends; when the grooves arrive at the turned in ends, these contract, engage in the grooves, and fix the handle without any necessity for soldering.

[Printed, 6d. Drawing.]

A.D. 1856, January 28.—N° 226.

SAMAIN, PIERRE.—"Improvements in tables, stools, and other pieces of household furniture," namely, in constructing them so as "to come apart and certain parts to fold up." In the description given of a table three arms, supporting the top, and three legs are made with tenons which fit into mortises and are secured therein by pins. Nuts are fastened to screws projecting from the top and bottom of the pillar, and keep the arms and the legs "firm and steady." The same method of construction may be applied to parts of other articles.

[Printed, 8d. Drawings.]

A.D. 1856, January 29.—N° 240.

MURRELL, OWEN.—(*Provisional protection only.*)—"Improvements in swing looking glasses," that is, in the knobs for tightening the frame in the pillars. A small hole is bored through each knob; the hole is enlarged "from the outer end" about half way down; a tapped piece of metal is inserted, and the larger part of the hole is filled up "with a hollow cup, the outer end of which is shaped to complete the ornament of the knob." A piece of round wire is screwed into the tapped hole, the other end being formed with a neck; this wire is so shaped that when it is passed through a hole in the pillar it cannot turn round. "Inside of each upright side of the frame" a piece of metal is fixed "in which is formed a hole, somewhat of the shape of the figure 8," the lower opening being the larger to allow the end of the wire to pass freely through, the upper fitting the neck of the wire. By this arrangement the frame will be tightened against the pillars as the knob is turned round.

[Printed, 4d. No Drawings.]

A.D. 1856, January 30.—N^o 247.

WINFIELD, ROBERT WALTER.—“An improvement or improvements in the manufacture of metallic bedsteads and other articles of metallic furniture.” The parts to which this invention is especially applicable are “the ornamental parts, such as the capitals and bases of columns, and other parts having only an ornamental object, also the parts having a partly useful and partly ornamental object, such as the ornamental pieces or castings which effect the junction of joined or crossing rods or parts.” The metal used is zinc, and, “where greater strength is required than zinc possesses,” iron coated with zinc. The ornaments, where the figure permits, are made of “sheet zinc stamped in dies and coated with copper or brass;” otherwise they are made “by casting or otherwise” and afterwards coated; ornamental joinings are made of cast zinc coated, or of iron coated with zinc. Corner blocks and dovetails are manufactured of cast-iron; they are first coated with zinc “by the well known process called galvanizing,” and afterwards with copper or brass. Zinc tubes (with or without an internal core of iron) are coated with copper or brass and used in the manufacture of bedsteads and other articles of metallic furniture.

[Printed, 4d. No Drawings.]

A.D. 1856, January 31.—N^o 261.

TYLOR, HENRY.—“An improved joint, applicable to cots, bedsteads, and other frames in metal.” At each end of each side rail are fixed two plates or cheeks, the greater portion of each projecting beyond the end of the rail. Between the cheeks are inserted and pinned the ends of two bars, “the inner end of each of which is cut diagonally to a corresponding bevil.” The bars move freely on the pins, and can be folded parallel with the side rails; one forms a post, the other a leg. In a cot, the upper bar is kept upright and pressing against the lower by the upper frame rods; but in some articles it is necessary to provide a folding support to prevent the upper bar from falling inwards.

[Printed, 6d. Drawing.]

A.D. 1856, January 31.—N^o 267.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.—“Improvements in folding bedsteads and chairs.” In bed-

steads, the middle legs are hinged or pin-jointed to the two end frames; they are attached to the other folding legs by links or rods; and when the bedstead is unfolded, they are united on each side by a bar pin-jointed to the one, and capable of entering a socket carried by the other. The head and foot frames are hinged so as to fold. "To produce the appearance of a cabinet or closed piece of furniture, some of the parts may be covered with panels of wood or metal." The chair is composed of four frames; two leg frames which cross when opened, pin-jointed and provided with stops; a seat frame pin-jointed to the tops of the leg frames; and a back frame pin-jointed to the side rails of the seat frame, "at points forward of the back rail of the seat." The lower part of the fabric of the back "is fixed to a curved rail." The seat and back frames may be covered with fabric, stuffing, &c., or they may have "a woven fabric of cane combined therewith," which constitutes the third part of the invention; the novelty of this consists in drilling holes in the metal frames; the holes are rounded or counter-sunk, or bushed with soft metal or wood, and the cane is woven thereto. This method of weaving can be applied to other frames.

[Printed, 10d. Drawings.]

A.D. 1856, February 1.—No 282. (* *)

HOOPER, GEORGE NORGATE, and HOOPER, WILLIAM.—
 "Improvements in springs for carriages, and for the cushions of carriages, chairs, mattresses, beds, and other similar articles." These, are, first, "the general constructions, arrangements, and combinations of compensating springs for carriages, cushions, chairs, mattresses, beds, and other similar purposes." Second, "the application of compensating springs, composed of rings or strips of vulcanized india-rubber, of different sizes or lengths, to the ordinary steel springs of vehicles." Third, "the application of compensating springs, composed of rings or strips of vulcanized india-rubber, of different sizes or lengths, to the seats of carriages or chairs, and to mattresses, beds, and other similar articles of furniture."

[Printed, 10d. Drawing.]

A.D. 1856, February 4.—No 300.

HUDSON, CHARLES HENRY.—(*Provisional protection only.*)—
 "A retiring door or lid for boxes, cabinets, closets, rooms,

"carriages, and for all places or receptacles where or in which doors or lids are at present in use or may be used." The room, box, &c. is provided with grooves "corresponding with each end or side of the door or lid thereof;" a guide piece sliding in the grooves "carries the door or lid by means of hinges, and by guiding the same in the said grooves (aided in some positions by runners) entirely retires the door or lid, causing the front of the room, box, or other receptacle, when open, to present a perfectly flush appearance."

[Printed, 6d. Drawing.]

A.D. 1856, March 8.—N° 574.

COOK, THOMAS.—"Improvements in portable bedsteads." The four posts are telescopic, the tubes being kept in position when drawn out, and prevented from extending too far, by collars, grooved sockets, and studs. To the lowest tubes are affixed sockets with ears for admitting the ends of the rails, which are jointed in the middle so as to fold up. The rail ends, which are of a bracket form, are secured in the ears by bolts, and the rails are further steadied by stays. Legs connected by a bar support the side rails at the joints. The head frame consists of horizontal bars carrying rods and hooked or screwed to the posts. The curtain frame is made with joints in the middle, and is attached to the tops of the posts by means of holes and projecting pins.

[Printed, 6d. Drawing.]

A.D. 1856, March 15.—N° 624.

HAWKINS, JOSEPH BENJAMIN.—(*Provisional protection only.*)—"Improvements in couches or sofas, parts of which are applicable to other like furniture." The first part "refers to making couches reversible, so as to have right or left-hand scroll ends:"—this is effected by joining the parts to each other and to the frame by screw bolts and nuts or by studs and slots. The legs are fastened to the wood framing by screw bolts. The second part, to fixing and tightening the web bottoms:—this is done in two ways; one end of the webs is doubled; the loop so formed is passed through a slit (in one side and one end of the frame) "produced by a side lath;" a small wedge is inserted which secures the webs; the opposite ends "are similarly passed through

" slits in one or more rollers, rotating on axes and regulated by ratchet work placed parallel within the side and end of the frame." Or the ends of the webs are passed " through slits in one or more lengths of laths, also placed parallel within or near the sides and ends of the framing, but on one side, and one end having a space between, so that by means of screw bolts passing through the frame and entering the laths, the same can be drawn close to the framing." This arrangement " may be rendered portable by using an independent light wood framing, divided into two or more parts, folding together and hinged." The linen cover is secured to the frame, " by being pressed into a ploughed groove by strips of sheet lead or other metal or material."

[Printed, 4d. No Drawings.]

A.D. 1856, March 15.—N^o 626.

WINFIELD, ROBERT WALTER, SIMMS, JOHN, and LLOYD, THOMAS.—" Improvements in the construction and ornamentation of metallic bedsteads, and other articles of metallic furniture." The first part relates to fixing rails to posts:—to the end of each rail is fastened a hollow cylindrical block; two blocks drop upon each post, one over the other, and are secured at the required height by a conical shoulder or other stop. The second, to coating rods or pillars:—" a roughly-formed tube of brass or other metal " is placed on the rod or pillar, and both are drawn through a draw plate or collar of tin or other soft metal." The third, to ornamenting metallic bedsteads, &c.:—this is effected " by encasing the same in ornaments, the general figure of which is tubular." The ornaments are attached by collars at top and bottom, and sometimes collars are introduced at the middle or other part.

[Printed, 6d. Drawing.]

A.D. 1856, March 18.—N^o 642.

BIRD, THOMAS, and ROSE, THOMAS.—" Improvements in castors." The patentees claim as their invention " the construction of castors with one or more spheres or balls placed in a cup, and working loosely against one or more points, spheres, or balls, in conjunction with a larger ball, with its propelling rim composed of balls, pulleys, or edges." The frame of the

castor consists of three parts screwed together; an upper, middle, and lower part. The first is employed in fastening the castor to furniture; it may be made with "an adjusting screw either with or without a set nut in the frame;" the second or cup terminates in a "propelling rim" which bears against the larger ball "at one-third of the diameter from the top;" the third or keeper is a circular cap or ring which retains the ball in the cup. "The upper part of the sphere or ball plays against a smaller sphere or globe placed within the cup;" this smaller sphere "fits loosely within its cup," so that it may be able to move in any direction, "or a fast or loose convex centre may be substituted for it;" instead of one sphere "any desired number may be used." Part of the sides of the cup may be cut away "leaving only three prongs or claws to confine the ball." Or the larger ball may be "bounded at the sides by antifriction propelling rollers," or by "balls or spheres placed in suitable cups or holders." Any of the cups for holding balls may be bounded by india-rubber or other material to prevent noise. The large ball is made of glass and the smaller one of ivory or similar material, "thus making it a double spherical insulator" peculiarly applicable to musical instruments; they may, however, be of other materials.

[Printed, 8d. Drawing.]

A.D. 1856, March 24.—N° 697.

PITT, WILLIAM, and DAVIES, EDWIN TURNER.—"Improvements in the manufacture of brackets and castors for furniture." The improvements "are with the view to economize the more expensive metal brass," and to produce "with all the appearance and durability of brass in a cheaper metal" brackets for suspending cornice poles, curtain and picture rods, hats and garments, &c., and sockets and horns of castors. The metal employed is sheet zinc or sheet iron; the bracket is made by bending up the metal into the required shape in one, two, or three pieces, and soldering the joints where necessary; it is then subjected to the process of brassing "or the electro-deposition of a coating of brass," and finally lackered, or if desired, electro-gilded. If sheet iron be used, care must be taken "that a good surface be obtained for the subsequent processes of brassing and gilding." A bracket for suspending hats, &c. is made of solid zinc or iron rod

bent into form; the knobs (of cast zinc) are screwed on; the back plate (of sheet zinc) is soldered into its place; and the whole is then polished or burnished, coated with brass, and gilded if required. A castor socket is either cast in a mould or formed of sheet zinc by "spinning upon a chock;" the casting must be "transferred on to the chock of a lathe in order that the external surface may be rolled smooth." The horns are cast in a mould; if pure zinc be found too brittle, a very small quantity of soft solder put into the pot with it "will make the metal closer in grain and better suited for the purpose." Both socket and horns are finished by brassing and gilding.

[Printed, 6d. Drawing.]

A.D. 1856, March 25.—N° 703. (* *)

GIZARD, LOUIS ANTOINE. — (*Provisional protection only.*)—
 "Improvements in elastic mattresses and cushions. It consists
 "in substituting for the iron springs in mattresses pieces of
 "caoutchouc" as follows:—"Each piece is about three inches
 "long by two inches wide, and is terminated at its two extre-
 "mities by two rings, of which the first is traversed by a small
 "rod resting on the cross piece of the mattress," "and the other
 "receives a cylinder which presses at will. The end of the
 "cylinder is surmounted by a wooden headpiece, moveable in all
 "directions, and of about two and a half inches in breadth.
 "The cylinder passes into the cross piece of the mattress, and its
 "extremity is retained by the piece of caoutchouc at the lower
 "part. Above the cylinder the bedding is placed. It is also
 "applicable to cushions, chairs, and other like purposes."

[Printed, 6d. Drawing.]

A.D. 1856, March 25.—N° 708.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.
 —"Improvements in the manufacture of chairs, bedsteads, and
 "other articles to sit and recline on." The first part of this
 invention "consists in an improvement in connecting together
 "and ornamenting the different parts of the frames of metal
 "bedsteads, chairs, and other articles." The parts are cleansed
 "and enclosed in a closely fitting mould of brass of such
 "interior form as to produce the casting required," when the
 metal (zinc or other metal melting at a lower temperature than

brass) is poured into it. As soon as the casting is sufficiently cool, "it is removed from the mould and at once plunged in the " depositing bath, and by connecting it with a galvanic battery " and by the use of suitable solutions, brass or other metal is " deposited on it." The second part "consists in a method of " making the legs" of the same articles:—A mould is prepared to correspond with the form of leg to be produced, and a core "to " correspond to the form of the mould" is formed on a bar or tube of iron; "when the bar or tube with the core thereon is " introduced into the mould and the metal is poured in, a thin " shell of metal is formed attached to the iron bar or tube at the " top and bottom." Or the metal shell may be cast separately and afterwards fastened on the bar or tube. The third part " consists in a method of constructing folding chairs:"—Two rectangular frames are "connected by suitable axes and stops, so that in opening to support the seat they cross each other. The seat is hinged "to the top rail of one of the frames," and when the frames are folded it "passes through the back over the top " rail of the other frame and folds downwards." The back "is " formed of a third frame which is hinged to the frame on which " the back part of the seat rests;" it folds downwards "over and " in front of the other parts;" it is prevented from going too far back (when the chair is opened) "by projections on the lower part " of its frame below the axes of motion." Or the leg frames may be prevented from opening too far by a stop "projecting " on each side from the seat, so that the seat acts as a tie" to the leg frames.

[Printed, 8d. Drawing.]

A.D. 1856, March 26.—N^o 720.

DAFT, THOMAS BARNABAS.—"Improvements in the manufacture of metallic and other bedsteads, and articles of metallic " and other furniture." Five improvements are described. First, a mode of connecting the legs and pillars to the angles of the frame:—they are connected by "spigot and faucet" joints, to which is given "such an inclination as shall make " them firmly unite when simply put together and driven home." The frame "is cast in one piece and has sockets or faucets at its " corners," and the upper part of the legs and the lower part of the pillars are cast with spigots on them. If the pillar and leg

are cast in one piece, only one joint is required. If the pillars and legs are of earthenware, china, or glass, their ends are cemented into "metal cups of suitable form for fitting into the sockets in the frame." Second, a method of ornamenting the legs and pillars when of cast iron:—this is done "by placing the same in a suitable mould of sand or metal and casting therein upon the cast-iron leg or pillar brass, copper, tin, or other suitable metal, so as to coat or give a new surface to the leg or pillar." Third, a method of fixing castors:—"a screw is used which passes up from the castor to a metal washer (supported by suitable projections formed on the interior of the leg) where it is secured by a nut;" or the screw may extend upwards the whole length of the pillar and be held "by screwing on a vase." Fourth, "tipping the ends of the legs" with brass or other suitable metal:—a tip (some-what like a button) is fastened to the leg by means of its tubular shank which enters a hole in the bottom of the leg "and is turned over or rivetted on the inside." Fifth, a method of rendering metallic laths elastic:—each lath is cut into two parts; between the parts "is introduced a ring of hoop iron which contains a ring of vulcanized india-rubber;" and two iron rings "passing round the vulcanized india-rubber ring" are "connected to the parts of the lath."

[Printed, &c. Drawing.]

A.D. 1856, March 27.—No 731.

TALL, JOSEPH.—"Improvements in blind rollers, and in fixings for the same." The roller is composed of two pieces of slotted metal tubing; inside the shorter piece a wooden core is fixed, having a longitudinal groove on one side for the admittance of a rod which is sewn to the top of the blind. To keep the groove immediately below the slot a second groove is cut in the core, into which a tongue (part of the longer tube) is made to project. A short core, having on one side a groove corresponding to the longitudinal one, is secured in the end of the longer tube; and, when the rod has been introduced into the groove of the first core, the longer tube is slid over the shorter one until the rod enters the groove of the short core. "The tubes with their cores are then pushed together or closed up, until the length of the roller is suited to the width of the blind." A moveable bearing bracket consists of a body made with an upper and lower projecting arm

or stop (the former being placed "against the under side of the "top beading," the latter preventing the sash, "when being "thrown up, from striking the roller"); a slot in which one of the roller pivots works; a claw; and a lug through which a thumb-screw passes for fixing the bracket to the beading. The thumb-screw may be placed "inside the bracket, so as not to be seen "from the room."

[Printed, 8d. Drawing.]

A.D. 1856, March 27.—N^o 733.

CUMMING, RICHARD DURANT.—(*A communication.*)—"A "footstool and hassock combined." A board, either plain or carpeted on one side, for the feet to rest upon, and cushioned on the other side to serve as a hassock, is supported on pivots between two uprights. Bracket pieces keep the board firm in either position.

[Printed, 8d. Drawing.]

A.D. 1856, April 4.—N^o 813.

CHAPPUIS, PAUL EMILE.—(*Provisional protection only.*)—"Improvements in looking-glasses, to render them double-reflective." One part of the invention "consists of a jointed arm, to "one end of which is fitted an upright rod carrying a looking-glass; the other end of the arm terminates in a clip, by which "the apparatus may be secured to the back of a chair" or the top of a dressing-table. The other part, "of a jointed rod, screwed or "otherwise fastened to the back of a chair, or other article of "furniture, from the top of which rod another rod depends at "right angles carrying a small looking-glass."

[Printed, 4d. No Drawings.]

A.D. 1856, April 17.—N^o 918.

EYRE, SAMUEL.—(*Provisional protection only.*)—"An improved "application of portable mirror," "which will throw a reflection "into a toilet glass." A swing mirror is supported on a rod (by preference) sliding in a telescopic tube; this tube is fixed by brackets to a chair back or couch.

[Printed, 4d. No Drawings.]

A.D. 1856, April 18.—N° 928.

SCOTT, URIAH.—“Improvements in metal fittings for furniture.” The first improvement consists in making curtain rings of “half-“ round ” metal; if brass, copper, or zinc is used, the ends are soldered; if iron, rivets are employed, or the rings are stamped out of sheet metal. Iron rings are vitrified, enamelled, or japanned. A cord or a band of felt or other substance is fitted inside the ring; an eye is passed through both, and a washer is placed at the end of the eye. The rings may be made “of a whole tube,” and the eyes “of lead or other soft material;” or a piece of lead may be inserted into some part of the rings to lessen vibration. The second, “in making cornices, poles, and ends of metal in combination with other material:”—They are made of stamped sheet iron and vitrified, enamelled, or japanned. The edges of the poles (to prevent vibration) are not joined; a slip of wood, T-shaped, and having the bottom part covered with felt or other soft substance, is inserted into the slot: the wood or the felt can be used alone. Sometimes the edges of the poles are joined; holes are drilled in them, and lead in small pieces is introduced and burred on the inside and the outside. The third, in making castors and their wheels of metal combined with other materials:—In some cases the wheel is made in two parts, between which is placed “glass, felt, gutta percha, or other suitable material.” If the wheel is made of one of these materials, it is “larger in diameter “ than the washers,” one of which is fastened on each side by a bolt, rivet, or other contrivance. If the castor and wheel are of iron, they are vitrified, enamelled, or japanned, wholly or in part.

[Printed, 8d. Drawing.]

A.D. 1856, April 25.—N° 991.

NAAR, WILLIAM.—(*Provisional protection only.*)—“Improvements in folding or adjustable articles of furniture.” This invention, as applied to a couch, “is carried out by making both “ the back and the arm or end piece moveable.” The back is hinged at its outer end “to a horizontal stud in the couch frame “ this joint being so arranged as to afford the back a trifling amount of horizontal end play;” the other end is jointed “to “ the corresponding upper scroll end of the arm.” The arm itself “is hinged upon a horizontal spindle” on the frame; its bottom

joint "is fitted with a ratchet-detaining apparatus." When it is desired to lower the parts, the detent is raised "by a string or other attachment disposed beneath the couch pillow." In the back "is a curved or segmental slot, in which is entered a stud pin fast on the main frame."

[Printed, 4d. No Drawings.]

A.D. 1856, April 28.—N° 1010.

GEERING, HENRY.—(*Provisional protection only*).—"An improvement or improvements in metallic bedsteads, chairs, couches, and other articles for sitting, lying, or reclining upon," that is, in the joints of the same. The patentee describes his invention with reference to a bedstead. Upon each pillar is cast a corner block "furnished with openings situated in vertical planes of a form to fit the ends of the side rails." The rails are of angle iron, and the vertical side is cut away in the following manner:—The vertical side "is slightly inclined, the upper edge being rather longer than the lower;" from this side, at a short distance from its end, a tongue is cut away, "so as to leave a division or opening in the said rail from its lower edge nearly to its top."

[Printed, 4d. No Drawings.]

A.D. 1856, May 13.—N° 1124.

TUCKER, HIRAM.—"An improved spring sacking or foundation for a bed, mattress, or other like article." The outer frame is rectangular. "Directly over and properly supported" on each end rail is a rod, round which several springs are coiled. One end of each spring is continued so that two opposite ends uphold "an inflexible or slightly flexible or wooden bar." The inner end of each continuation, "or lifter spring," is united to the adjacent end of its bar "by means of a flexible hanger or stirrup," which may be hinged or otherwise jointed to both. The supporting parts are connected to two or more flexible bands, whose ends are fastened to the side rails. Instead of making the coiled spring and the lifter in one piece, the latter may be connected to the end rail and be upheld by or made to rest upon a spring "interposed between its two ends" and resting on the side rails.

[Printed, 8d. Drawings.]

A.D. 1856, May 15.—N° 1154.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Pierre Touben.*)—(*Provisional protection only.*)—"An improvement " in stuffing seats, cushions, furniture, and other similar articles." The material to be employed is "a tropical plant or vegetable " fibre, known by the name of istle;" it is prepared "by combing, " spinning, dyeing, and crisping or frizzing it in a similar manner " to the frizzing of horse-hair. It may be used alone or mixed " with horse-hair, or with other suitable vegetable fibres."

[Printed, 4d. No Drawings.]

A.D. 1856, May 21.—N° 1203.

BOWER, MANOAH, and BARWELL, JOHN.—(*Provisional protection only.*)—"A new or improved method of joining the parts " of metallic or other bedsteads and other articles of furniture." In the corner block of the post recesses are made "proceeding " from the face downwards," but not through the block. The ends of the rails are fashioned in the shape of a T or a dovetail, the recesses being of a corresponding figure. A second block without recesses, but tapped, is dropped over the post, and engaging with a convex screw thereon securely holds the ends. The rail ends are sometimes made of different shapes "to prevent " their being placed in the wrong blocks."

[Printed, 4d. No Drawings.]

A.D. 1856, May 26.—N° 1254.

HULSE, WILLIAM.—"An improvement or improvements in " metallic and other bedsteads, which improvement or improve- " ments may be applied to other articles of furniture and to " framework generally." This invention relates to a method of joining corner blocks to posts, rails to blocks, and laths to rails. If the post is of iron the block is cast thereon; if of wood the block is attached "in a diagonal direction" by a screw. The block is formed with two square horizontal arms. The angle-iron of the rail bears against two sides of one arm, and abuts against the shoulder of the block. A conical plug affixed to the under side of the horizontal part of the angle-iron fits into a hole in the arm. The laths are fixed to the rails by means of buttons. The button consists "essentially of two cylindrical parts" eccentric to

one another; on one part is a square shoulder, on the other a tongue. The button is passed through the angle-iron, and, when the hole of the lath is dropped upon the shouldered part, a washer is riveted or otherwise fastened on the shoulder. The button is then turned, and the tongue comes under the rail.

[Printed, 10*d*. Drawings.]

A.D. 1856, May 30.—N^o 1284.

HEAL, JOHN HARRIS. — “An improvement in hair and wool “mattresses.” A comparatively thin mattress is first made up in a case and tied through at intervals; on one or both surfaces a quantity of hair or wool is placed, and the whole is covered with a case and again tied through. If an increased thickness is required, two or more thin mattresses “may be first made and placed into “a case, there being wool or hair introduced between, above, and “below such inner mattresses.” The whole is then tied through at intervals.

[Printed, 4*d*. No Drawings.]

A.D. 1856, June 3.—N^o 1315.

HEYWOOD, EDWIN, and DIXON, THOMAS OGDEN. — “Improvements in the means of attaching drawer and other knobs “or handles.” The knob for a drawer has a female screw cut in it; the pin, which is separate and applied to the knob from the inside of the drawer, has a corresponding male screw cut on it; the part which passes through the hole formed for it in the drawer is by preference “somewhat conical or tapering towards the “screw;” and the head is made sufficiently large “to prevent “its being drawn through.” When knobs “have to be applied “back to back on the opposite faces of a door or other place,” the pin is made longer and with a screw at each end to pass into corresponding female screws in the knobs; or the pin may be formed with or affixed to one knob and screw into the other.

[Printed, 6*d*. Drawing.]

A.D. 1856, June 4.—N^o 1331.

MORRISON, DUNCAN. — “Improvements in the manufacture of “metallic bedsteads and other articles to sit or recline on.” The first part relates to the construction of stretchers; these are composed of bent bars having a screw cut at each end, whereon is a

screw nut. On each end is placed also a forked piece for the reception of the side rail. The rails are separated by screwing the nuts outwards. The screw and nut may be placed on one side only. The second consists in electrotyping the ornaments of bedsteads:—The ornaments are of copper, made in two halves and soldered together. The third, in manufacturing posts or legs “by bending metal into the desired tubular forms:”—The edges are not joined, but the exterior is coated with paper or textile fabrics, which are afterwards japanned or varnished.

[Printed, &c. Drawing.]

A.D. 1856, June 10.—N° 1374.

WAGNER, HENRY.—[*Provisional protection only.*]—“Improvements in beds & mattresses, and in similar articles of bedding.” One improvement consists in “affording ventilation” to beds and mattresses:—Circular pieces of wire gauze in frames are fixed in the tick, “in manner somewhat similar to the ordinary metal “eyelets.” In beds these are placed principally round the borders; in mattresses they are distributed over the surfaces. Similar ventilators may be placed in bolsters, pillows, and the like. Another improvement consists in forming mattresses on each surface with one or more rows of eyelets, through which laces are passed for the purpose of compressing the stuffing.

[Printed, &c. No Drawings.]

A.D. 1856, June 12.—N° 1394.

FAIRCLOUGH, JAMES.—“An improved expander and contractor for dining tables,” composed of cross levers arranged on the principle of lary tongs, and caused to expand and contract by means of a screw. The tongs are attached to the D ends of the table by the extremities of the outer levers, or by links, or by studs and grooves. The screw is mounted on bearings under one end of the table, and is worked by a key or handle into nuts or hollow screws fixed to the middle of each pair of levers; it is formed on a spindle “which is of less diameter at or near the “point or outer end, and for some portion of its length at the “back or reverse end, than the screw formed thereon,” so that when the table is contracted the nuts lie on the back portion thereof. In large tables legs are added to the levers. If ordinary telescope slides are used, the hollow screws are formed in the cross

bars, and regular action is secured "by using a spring catch on the front slides," so constructed and placed that the pressure of the screw releases it from the slide to which it locks itself. The levers may be "in duplicate, one set immediately above the other," with the screw working into "nuts placed between the twin levers;" or a set of telescope slides may be introduced between them; or a set of cross levers may be used in combination with telescope slides, arranged above or below them. The levers or levers and slides may be actuated by screw spindles of other form and position than the one described.

[Printed, 10d. Drawing.]

A.D. 1856, June 19.—N^o 1441.

TILLET, GEORGE.—"Improvements in bedsteads." In metal bedsteads a collar is passed over each post. The collar has cast upon it two ears having curved slots therein. The ends of the rails are stamped, "so as to form corrugations or projections and recesses or grooves upon them," the extremities thereof being slightly inclined, and they are wedged tight by driving them downwards into the slots. If the posts are of wood, the ears are cast with tongue pieces which are inserted into the posts and held securely therein by interlocking each other, one being kept in its place by screws or pins. "An internal or concealed" joint for iron bedsteads consists of a collar fitted internally with a solid metal plug fastened therein by a transverse screw or pin. The slots in the plug "correspond in form to the corrugations on the rail ends," but only one corrugation is needed. The slots "must be twice the height of the rails," and the upper half "wide enough to allow the corrugation on the rail being pushed therein." The upper half is covered by an ornamental sliding collar. Another joint suitable for wooden bed posts is made by inserting therein the tongue piece of "a circular metallic beading," which "stands out from the side of the post," and is "slightly inclined inwards at the lower side." A "corresponding parallel slotted hole" is made partially or entirely through the rail near its extremity, and when the hole "is slipped over the projecting beading, and firmly pressed down thereon, a wedging action will take place." The top and bottom of the hole are protected by a small plate, and "an adjustable face plate" is fitted to the sides of the post for further tightening the joint in case of "shrinkage of the wood." The laths are joined to the

rails by buttons and holes, and are supported at the middle by a longitudinal bar secured to the head and foot rails.

[Printed, 10d. Drawing.]

A.D. 1856, June 19.—N^o 1444.

MOLESWORTH, GUILFORD LINDSAY.—“An improved patent child’s cot.” The sides are formed of a stiff frame (hinged in the middle), to which the body holding the bedding is attached. The body is of sacking, or of cane or wickerwork, “bellying down from the frame.” At the corners of the frame eyes are punched for cords by which the cot is suspended. The cords are provided with “swivel safety hooks;” and the cot is furnished with ornamental fringe, which either hangs down or is turned up and fastened to the cords. Instead of the fringe a second frame may be placed at a suitable distance above the first, and held in position by knots in the cords, the space between the frames being covered with netting or other material.

[Printed, 6d. Drawing.]

A.D. 1856, June 30.—N^o 1533.

BROWN, HENRY, and BARTLETT, JOB.—(*Letters Patent void for want of Final Specification.*)—“The construction of an iron easy arm-chair bedstead.” The back is pivoted to the seat; the pivots “are placed on the back twelve inches from the bottom, so that the lower part of the back forms levers under the seat.” A second seat is pivoted to the front of the seat “in the same way as the back.” Two rods are pivoted to the back and to the front seat in such manner that as the former is lowered the latter is raised. To effect this a circular rack is placed on the pivot “of the connecting rod from the back lever;” and an arbor “is placed on the side of the seat on centers, at one end of which is placed a bevel wheel, at the other an endless screw or worm; to the latter the rack is connected.” Across the seat underneath is a shaft, “with a bevel wheel and a handle on the right and left of the seat, which is connected with the bevel wheel on the arbour of the endless screw.”

[Printed, 4d. No Drawings.]

A.D. 1856, July 5.—N^o 1578.

LEWTAS, JOSEPH, and HUMPHREYS, JOHN, the younger.—“Improvements in apparatus for holding and releasing cords,

"chains, bands, or bars." This invention consists in improvements on the apparatus for which Letters Patent were granted to Mr. Lewtas on September 17, 1855, No. 2092. The slots described therein are dispensed with, and the cord to be held or released passes between a moveable roller and a fixed surface. On the lower end of a bracket, "screwed to the framework of the "window," are cast or fixed two projections between which a roller moves freely. A lid is soldered or otherwise secured to the projections, "thereby forming a box for the roller;" and a cord passing between the hinder projection and the roller is made fast to the pulley of the roller blind and bound by the roller "against the inclined plane" of the projection. To lower the blind "the cord is drawn down sufficiently to allow the roller to release it," and the roller drops to the lower part of the front projection, "which forms a guard to prevent the roller dropping." The cord is held in a slanting direction, "and the blind is allowed to descend by its own weight until it is sufficiently lowered;" the cord is then "brought into the vertical position again, thereby coming in contact with the roller, which is thus raised by the friction of the cord into its original position." In a modification "the box formed by the projections with the plate that connects them, and the lid is jointed to a stud on which it swivels, the amount of the swivelling motion being governed by the segmental slot in the bracket and the stud on the box;" this allows the box containing the roller "to yield to the action of the cord when it is being wound on the barrel of the blind roller;" or a small antifriction roller "may be placed to guide the cord on to the barrel." In a Venetian blind one bracket is made with three projections, and a second "forms also the lid to retain the rollers in their places." The two cords are guided by pulleys to the blind, and "are held fast or released by the rollers in the manner above described." In a blind of great width requiring three cords the bracket is made with three compartments, and three rollers are employed. Sometimes "a ball or block" may be used instead of a roller.

[Printed, 8d. Drawing.]

A.D. 1856, July 8.—N^o 1612.

BAYER, LOUIS.—(*Provisional protection only.*)—"An improved stuffing to be used in place of hair or other substances in which

"such articles are commonly employed." The substitute is "vegetable fibre obtained from the colonial plantain tree or musa paradisiaca." The fibre is taken from the tree, "and subsequently submitted to the ordinary processes of dyeing, curling, carding, or otherwise."

[Printed, 4d. No Drawings.]

A.D. 1856, July 19.—N° 1698. (* *)

McMASTER, WILLIAM, and McMASTER, JAMES. — (*Provisional protection only.*)—"An improved apparatus for retaining and releasing cords of window blinds, or cords, bands, or chains employed for other purposes."

"This apparatus consists of a case or box enclosing a bowl or roller without a pivot or axle, but revolving or running loosely in a direction from end to end of the box or case. Upon one of the interior surfaces of this box is formed an inclined plane, so as to render the interior of the box of a wedge shape, or smaller at one end than the other. The cord of the blind is placed (for example) through the aperture at one end of the case or box under the bowl or roller, and thence through the opposite end of the box to the blind. If the cord is now drawn downwards, so as to raise the blind, the roller will fall to the largest or lower end of the case or box, and allow the cord to run free; but when the blind is raised to the height required, if the cord is released from the hand, the weight of the blind will cause the cord to run rapidly through the box, and by its friction lift the bowl or roller to the smaller or upper end of the box, thus tightening upon the cord, which will be held or retained between the roller and the interior surface of the box until it is again drawn downwards, when the roller will fall to the lower end and release it until again allowed to rise, upon which it will be retained as before."

[Printed, 4d. No Drawings.]

A.D. 1856, July 22.—N° 1737.

CLARK, JAMES.—"Improvements in the manufacture of beds, mattresses, cushions, and seats." To produce air-proof beds, &c., calico or other suitable fabric is employed "woven or manufactured double, in longitudinal, transverse, or other divisions." *This double fabric is coated on both sides with waterproof com-*

position; the beds, &c. are then cut out and finished in the usual way. To insure the passage of air into the several compartments a notch is cut in each near the edge, "so that the binding covers but does not close such openings." Both sides are covered with another piece of fabric which has been coated with waterproof composition. "Air-tight valves are applied in ordinary manner." Another method of manufacturing such beds, &c. is to enclose in the air-proof fabric a row of tubes made of calico, or woven tubular, and coated externally with the composition. To produce waterproof beds, &c. the compartments are stuffed with hair or other material, and the edges or seams of the covers are cemented with the composition and with waterproof tape. To produce beds, &c. non-waterproof the covers are woven as before described, the compartments are stuffed, and the edges of the covers are sewn or bound round. "For elegance and variety of appearance" each side of the double fabric may be woven of different material.

[Printed, 4d. No Drawings.]

A.D. 1856, July 25.—N^o 1772.

JAY, SAMUEL, and SMITH, GEORGE.—"Improvements in stuffing or padding couches, cushions, bedding, chairs, and other similar articles." These improvements consist in substituting tubes or spheres inflated with air for the ordinary stuffing. The tubes are generally made of india-rubber, but the patentees do not limit themselves thereto, claiming the employment "of distinct and separate inflated objects as a stuffing or padding."

[Printed, 4d. No Drawings.]

A.D. 1856, July 29.—N^o 1790. (* *)

LIVSEY, PETER JOEL. — (*Provisional protection only.*) — "Improvements in arrangements and mechanism for rotating and retaining the rollers of window blinds." It consists, first, "of a ring of metal or other suitable substance through which the cord or tape of the blind is passed; to this ring one end of a vulcanized india-rubber band is attached, and the other end is secured on a stud fixed in the window frame," &c. Second, "applying a spring of india-rubber or of metal in the spiral or other suitable form, to exert a pressure on a ring or frame with an antifriction bowl, round which the cord or tape of the blind

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“ roller passes, so as to keep a tension on the cord or tape, to give force sufficient to rotate the roller and retain it, and thus the blind, in any required position.” Third, “applying elastic cord or tape made of india-rubber or india-rubber covered or interwoven with thread or other fibrous material to the purpose of rotating blind rollers and retaining them in any required position; such elastic cords or tapes (endless) may be passed round the pulley of the blind roller and round a fixed stud or an antifriction bowl, that is, round a stud or antifriction bowl without an arrangement for adjustment.”

[Printed, 4d. No Drawings.]

A.D. 1856, August 20.—N^o 1946.

CLARK, CHARLES.—“Improvements in combining and arranging looking-glasses for toilet purposes.” One improvement consists in fixing two, three, or more looking-glasses between pillars on the same pedestal. The glasses are placed at an angle to each other and supported on swing pivots; and the pedestal “is formed to suit the position of the glasses.” Another consists in constructing the pedestal so that the angle of the glasses may be varied. The middle pillar is in two parts; the pedestal is cut into two at the same line. A pin joint is formed in front, and one end of an arc is fixed in one portion of the pedestal, whilst the other is received into a curved socket in the other portion.

[Printed, 10d. Drawing.]

A.D. 1856, August 25.—N^o 1977.

WEBB, WILLIAM.—“An improvement in reclining chairs,” chiefly chairs with metal arms and back frames,” although the invention may be applied to chairs with wooden back frames. Hinged to the back frame is a rod having holes in it and passing through a slot in the seat frame. Upon or under the middle of the seat frame is a spring bolt which shoots through the holes in the rod; to the other end of the bolt is connected a chain fastened to a pulley; this is fixed on one end of a rod which is carried beyond a side of the seat frame and fitted with a handle. When the bolt, chain, and pulley are upon the frame, a guard is necessary to protect them. If metal arms are not used, the bolt, chain, and pulley must be connected to the standards “to allow

“ of the rising and falling of the back.” Other contrivances may be employed for withdrawing the bolt.

[Printed, 6d. Drawing.]

A.D. 1856, August 29.—N° 2013.

BROWN, JOHN.—“ Improvements in swinging hammocks, and “ in the construction of bedsteads or couches, and in apparatus “ connected therewith.” First, modes of slinging hammocks :—a cord at one end is carried over a pulley and made fast to a peg or nail which is driven into the ground or floor. The pulley is supported on four legs which are hinged to sockets in a top plate. A cord at the other end is hung to a hook on a plate to which are jointed two legs and a stay rod, the latter being hooked to a screw pile ; all the legs have pegs at their lower end. Or both cords are passed over trestles (with or without pulleys) and secured to pegs driven into the ground or floor. Eight hammocks may be slung in two tiers so as to form a square ; a stove may be set up in the middle, having near the top of the chimney a ring which will support tent cords. The cords of these hammocks pass over pulleys, fixed on frames at one end and on pillars at the other, and thence over other pulleys to screw piles or nails. For hospitals any number of hammocks or beds may be attached to a metal frame, which is supported at one end by hooks fixed to a wall and at the other by a rail borne in brackets ; through the rail pass screws fixed to another wall or other fixture ; the screws are provided with wing nuts. Second, “ supporting the sacking frame of “ bedsteads :”—the frame is jointed at one end to stay rods and a trestle ; at the other it fits on upright screws and is jointed to other stay rods. Rods, trestle, and screws are jointed to a foundation plate, and the screw tops are furnished with wing nuts. Modifications of this method are described, in which tension bars with right and left hand screws are employed ; or the sacking frame is supported by cross levers, the end ones of which are connected by tension rods furnished with double nuts ; or the frame is made in two parts united by double nuts. Cross levers may be used in slinging hammocks. Third, a rocking motion for a cot or cradle :—the cot is suspended from the top cross bar of a frame, and acts as a pendulum to clockwork enclosed in a cover on the same bar.

[Printed, 1s. 10d. Drawings.]

A.D. 1856, August 30.—N^o 2024.

BOWER, MANOAH, PEYTON, RICHARD, and DOWNING, JOSES WEAVER.—“Improvements in metallic bedsteads, cots, “couches, and other such like articles.” The first improvement is in the mode of connecting the laths to the rails:—two longitudinal slits are cut through each end of the lath; “the middle “tongue” is coiled into a “cylindrical form” or bent into somewhat of a **L** shape; slots are cut in the rails “wider at one end “than at the other;” the tongue is introduced into the wider portion and moved laterally until its neck fits the narrow one. Or two tongues may be pressed out from the lath and bent down into the shape of a fork with or without “flattened ends.” The laths may have tongues of similar or different shapes at their ends. The second is a method of securing metal plates, rods, or ornamental castings to frames used at the head and foot or other part of a bedstead or like article:—The rods constituting the frame are formed of two semi-cylindrical or other shaped pieces welded together near the ends; the edges of the plates are inserted into the slits and riveted at intervals. If the head or foot rail is made in several portions, the plates after insertion are secured by ornamental castings cast upon the ends where the rods meet.

[Printed, 10*d*. Drawings.]

A.D. 1856, September 13.—N^o 2144.

PEYTON, RICHARD.—“An improvement or improvements in “the manufacture of metallic bedsteads and other articles for “sitting, lying, and reclining upon,” namely, in the method of uniting the rails and laths. On each rail are buttons of a wedge-like form, “the greatest length of the wedge lying in the direction “of the length of the rail.” A wedge-shaped opening, “some- “what larger at its wide end than the buttons,” is cut out near the end of each lath; the opening is dropped over the button and the lath is moved laterally “until the narrow end of the opening “engages under the head of the button.” Or the buttons may be of the ordinary shape and the slots “situated obliquely.” The arrangement may be reversed, the buttons being fixed to the laths and the slots cut in the rails.

[Printed, 6*d*. Drawing.]

A.D. 1856, September 16.—N° 2166. (* *)

BROOMAN, RICHARD ARCHIBALD.—(*A communication from P. Saroglia and V. Belli.*)—"Improvements in waterclosets and night stools."

"Below the seat is a reservoir for water communicating with
 " a smaller reservoir, which itself communicates with the pan,
 " The bottom of this pan consists of a metal or other cap or trap,
 " which closes the pan when shut, but is so constructed as to
 " open downwards into a receiver beneath. . . . Commu-
 " nication between the receiver and the drain or receptacle is closed
 " by a cap or trap, similar to that before mentioned, and con-
 " nected with it by a chain or rod in such manner that when
 " one is open the other is closed, and *vice versâ*. The traps are
 " connected by rods, levers, and a shaft or axis to the seat, so
 " that on a person pressing on the latter, the levers depress the rods
 " and turn the shaft, thus opening the upper cap and shutting
 " the lower one. The motion of the seat also operates two taps,
 " so contrived that when one is open the other is shut. The
 " depression [depression?] of the seat first opens one of these
 " taps, and thereby admits water from the larger to the smaller
 " receiver; but when the upper trap opens, the water that was in
 " it flows from the pan down into the receiver beneath. When
 " pressure is removed from the seat the said trap is restored to its
 " position by a counterbalance weight or by springs, the lower one
 " being simultaneously opened; the fecal matters are thus allowed
 " to pass into the drain or receptacle. At the same time the
 " second of the traps is opened, and the water from the second
 " reservoir flows into the upper or closed trap to seal it and pre-
 " vent the escape of noxious gases."

[Printed, 8d. Drawing.]

A.D. 1856, October 7.—N° 2344.

WILKINSON, WILLIAM.—"Improvements in castors in the
 " legs of tables, chairs, pianofortes, and other articles of furni-
 " ture, and in apparatus for perforating castor-wheels, which is
 " also applicable to the perforating of glass articles generally."
 "The first part of this invention relates to constructing castors
 " partly in glass or iron-stone, and in the means of connecting the
 " same to the legs of chairs and other articles:"—a solid wheel
 " or ball of glass or iron-stone is perforated for the reception of an

axis; the horns carrying the axis "project from and form part of" a collar or plate, which is connected to a second and separate plate formed either of metal, glass, or iron-stone by means of a pin or rivet." The castor is secured to an article of furniture by screws "which pass up entirely through holes in the collar and bear only upon the plate." The plate is sometimes "made larger so that the screws need not be passed through the collar." The collar may be connected by a pin or rivet to a socket of metal or iron-stone, and if the legs of the article are "horizontal or inclined," a shoe or cap to fit the same is employed instead of a socket. Sometimes "an ornamental cover" is added to conceal the horns and the greater portion of the wheel or ball; it is "recessed out in such manner that its upper inward projecting edge may rest upon a shoulder formed round the collar, and it is placed in position before the collar is connected to the socket." The second part describes a method of covering the legs of furniture with plain or ornamented collars of glass:—The leg "either all of wood or partially of metal" is made in three pieces which are screwed or glued together after the collars are put on them; the collars are supported by projections on the pieces and by rings of wood or metal, and on the lower end of the bottom piece is fixed "a metal or iron-stone socket, to the bottom of which is screwed a casting which enters the piece which carries the disc or sphere." The only information concerning the third part (a perforating tool) is that it is hollow, and that the air contained in the hollow "keeps it sufficiently cool to prevent the molten glass from destroying it."

[Printed, 10d. Drawing.]

A.D. 1856, October 8.—N° 2361.

ILES, CHARLES. — (*Provisional protection only.*) — "Improvements in frames and stands, and in suspendors or pegs for holding or suspending hats, coats, and other articles." This invention consists, first, in "coating with plastic materials (such as Keene's cement or any other plastic material capable of being worked to a smooth hard surface) the frames, and stands, and pegs;" and secondly, in making the frames and stands and the plates to which the pegs are fixed of sheet or rolled metal.

[Printed, 4d. No Drawings.]

A.D. 1856, October 14.—N° 2405.

ALLEN, THOMAS.—“An improvement in the manufacture of “iron and other metallic bedsteads.” The corner block is formed in one piece, having two vertical and two horizontal projections at right angles to each other. The posts, legs, and rails are tubular or “have hollow ends;” and when slid on to their proper projections they are fixed by pins, screws, or the like. On each projection is a collar, “against which the end of the tube comes.” The sacking is fastened to rods which are attached to the rails by screws.

[Printed, &c. Drawing.]

A.D. 1856, October 15.—N° 2408.

HALLEN, EDWARD....“Improvements in the construction of “chairs, sofas, bedsteads, and similar articles of furniture to sit “or recline upon.” Five inventions are described. 1. A folding chair or stool:—it is composed of two cross frames forming the legs, and a seat frame and a back frame both hinged to the leg frames. The seat has fixed under its front a hook at one corner and a staple at the other, which fit the “returned ends” of the front support; the back is supported by the returned ends of the hind support “which are above the axes on which the chair back “hinges.” The seat and back are filled in with cane or willow work or cordage. 2. A bedstead which folds up “to make a chair “or sofa with a back or with or without elbows:”—Five frames are employed; a seat frame, a three-sided frame hinged thereto and forming the middle of the bedstead, a similar frame (the open ends of each being hinged together), and two three-sided frames serving as legs to the open frames and hinged thereto. In the hind corners of the seat frame are holes for the passage of flat pieces of iron for legs, and flat iron legs are screwed to the front corners; the legs and leg frames are connected by rods. The hind legs “above the seat have holes in them to receive connecting rods” which form uprights for arms and supports for the foot frame when folded up into a chair back. The frames are filled in with laths, the longer ones being jointed. 3. “Making the “backs of chairs to recline at different angles with the seat:”—The back is hinged to the seat. Inside the horizontal portion of the elbows is a spiral spring acted upon by a rack, running within

it and having at its end a nut which presses against the spring when pressure is applied to the chair back. A check is forced into the notches of the rack by a spring. A link connects the hinder end of the rack to the chair back and causes the rack to move horizontally. Modifications :—The horizontal portion may be made to slide. There may be a long slot in the back and a connecting piece fastened to the horizontal portion. The lower part of the back may be united to the seat by springs. Springs may be fastened to the seat and press with their upper ends against the back. The back may be of wood, when a slightly different arrangement will be required. 4. Making bedsteads to pack up in a small compass :—The frame is made in two portions hinged together and supported by six legs ; the corner legs pass through holes in the frame and are fastened by wedges ; the middle legs are screwed in through projecting pieces ; the other legs may be fastened in the same manner. The head-board is fixed on the head-posts by pieces of half-round or flat iron ; or it may be riveted to one piece only, having eyes at top and bottom. Modifications :—The foot frame may slide within the head frame, lugs being welded to the former and stops and guides to the latter. On a bedstead for an invalid an upper frame is placed, " which has a frame composed of three pieces " hinged to it ; round these and part of the upper frame canvas is fixed, in which a hole " is left for the use of the patient." The arrangements are described by which the frames can be raised and the patient supported in a sitting position. 5. Applying willow-work or cording to iron frames :—Holes are pierced in the frame ; a seating of cane is laced through them, and the willow-work is then plaited over the sides of the frame ; the cane-work may be omitted. The cording is plaited through the holes, or bound round the frame and plaited as willow-work.

[Printed, 1s. 4d. Drawings.]

A.D. 1856, October 17.—N° 2431.

BRÉCHEUX, NAPOLEON. — (*Provisional protection only.*) — " Improvements in looking-glasses, applicable especially for " dressing rooms, and for other purposes." The reflecting surface is either flat, convex, or concave ; the frame is fitted on a telescope stand in such a manner that the looking-glass can be

“turned about in any way,” and be inclined “from a horizontal
“to a vertical position.”

[Printed, 4d. No Drawings.]

A.D. 1856, October 27.—N^o 2521.

SCHÄFER, PHILIPP, and SCHÄFER, FREDERICK.—(*Provisional protection only.*)—“An improved handle for desks, deed
“and despatch boxes, bags, furniture, and other articles to which
“handles are applied.” The handle is of leather or other suitable
material, and lies in a case or recess of such depth that when it is
not in use “it shall be flush with the sides of the case or recess.”
The two ends “work through a groove or slot at each end of the
“case and are stopped from advancing beyond a certain distance;”
and to each end or along the length of the handle are fitted one
or more springs, “or not, as may be found necessary.” To use
the handle, “it is seized by the finger and thumb” about the
middle and drawn out; on the hand being removed, the springs
will draw the handle down into its recess; if springs are not em-
ployed, “slight pressure with the finger or hand will force it into
“the recess and make it lie flush with the sides thereof.”

[Printed, 4d. No Drawings.]

A.D. 1856, November 15.—N^o 2709.

DREW, JOHN.—“Improvements in library tables or desks.”
The desk is composed of a writing table, front drawers on each
side, a nest of drawers on “each of the back corners” and of such
size “as to leave a space between them sufficient to allow the
“main or outer slope” to fold into it, and the usual accompani-
ments of a library desk. The slope, which is hinged on the part
above the pigeon holes, is made in two portions, jointed together
so that the front portion may fold back on the other before the
latter is opened. Pins, projecting from the main hinges of the
slope, move levers which act on stems provided with bolts having
turned up ends; these ends enter, or are withdrawn from, notches
in the bottom of the drawers by the pulling down or lifting up of
the hinder portion of the slope. If it is desired to have the
writing surface sloping, “a flap flush with the table” is connected
at its back edge by levers, rods, and pins, to “an eccentric slot
“in the metal plate which forms the main part of the hinge;”
the flap is thus raised or lowered by the opening or closing of the

slope. The under side of the slope is supplied with a series of pockets, and at the back of the desk are other drawers and two cupboards with doors; these may be opened and locked by "apparatus acting in the same manner as that already described," or by other means. A lock "is applied to the slope as in ordinary desks, and thus one key secures the whole of the drawers and receptacles in the table or desk."

[Printed, 10d. Drawing.]

A.D. 1856, December 1.—No. 2841.

EMMONS, EDWARD JACKSON.—(*A communication from Joshua Stevens.*)—"A new or improved nursery chair," in which a child may "exercise and amuse" himself; it is composed of a frame, a foot bar attached to the frame, and a seat suspended within the frame by means of springs. "There may be attached to the frame a scale, which, with an index pointer extended from the frame," will serve "to indicate the weight of the child."

[Printed, 8d. Drawings.]

A.D. 1856, December 2.—No 2847.

DWYER, EDMUND.—(*Provisional protection only.*)—"Improvements in the manufacture of children's chairs." One chair being made "with a suitably arranged seat having a flap shutting down with a spring," a second chair is combined with it; the legs of the latter "are set on and fixed to a board, the right and left hand sides being boxed," or "flanged with single wood slats, so that, when raised on the arms of the first chair, they may clip and hold the raised chair secure;" it may also be secured to the back by a spring or screw. "The top part of the back of the second chair is made to spring down on its arms, and is held there by elastic or other suitable fastenings; the seat is also flapped. This construction enables it to be turned upside down" and form a table, being fastened to the first chair by elastic bands or other means. The second chair, "by means of castors fastened to the bottom board," can be used "as a go-cart or invalid chair, and when so used, a rail in front, moving on a pin, connects the ends of the two arms."

[Printed, 4d. No Drawings.]

A.D. 1856, December 4.—N° 2875.

BAYER, LOUIS.—(*Provisional protection only.*)—"An improved "stuffing to be used in place of hair or other substances in which "such articles are commonly employed." The particulars of this invention will be found in the abridgment of the provisional Specification, dated July 8th 1856, No. 1612.

[Printed, 4d. No Drawings.]

A.D. 1856, December 9.—N° 2920.

WALTON, JOSEPH.—"Improvements in tables," so constructed that they may be "made available for a writing or work table." The top slides outwards; beneath is a chamber containing a box fitted with the requisites for writing or needlework. The box is pressed upwards by spiral springs and cross levers which are drawn towards each other by india-rubber rings; the sliding of the top and the rising of the box are arrested by stops. The box is kept down by a spring bolt which passes through a plate. Other means may be used for raising and lowering the box. The table may also contain drawers.

[Printed, 6d. Drawing.]

A.D. 1856, December 27.—N° 3082.

RITCHIE, GEORGE.—"Improvements in the manufacture of "beds and mattresses." The upper and under surfaces of the cover are united at intervals of a few inches by "upright partitions of fabric," and "intermediate of these" by narrow straps "of a length equal to the height of the partitions." The compartments thus formed are filled with ground cork.

[Printed, 6d. Drawing.]

A.D. 1856, December 27.—N° 3085.

MOREL, JOSEPH.—"Improvements in castors for fitting under "the feet of tables, seats, and other similar pieces of household "goods." The wheel is of any material, metal, horn, or hardened india-rubber; through it passes a small metallic cylinder, in which is inserted an axle pin; this takes into the sides of and turns freely in a spherical cup which is made fast to a disc by rivets. A pin, riveted into the middle of the disc, is let into the leg of the article of furniture, and an iron washer, applied under the leg

between a shoulder of the pin and a boss of the disc, "allows the "latter to revolve freely around the central pin." In another construction the disc is made fast on the pin by screwing, and the lower end of the pin enters into the side of the top of the cup, "where it is kept from running out by a peg running in a neck "formed in the collar." To allow of its turning freely in all directions the hole (for the collar) in the cup is not in the centre, nor is the axle pin mounted in the middle of the cup. If the wheel be of a globular form it must be loose, not turning on an axle pin, and the cup should be made in two portions screwed together.

[Printed, 8d. Drawings.]

1857.

A.D. 1857, January 9.—N^o 76.

DAY, JOHN ROCK, and HINKS, JOSEPH LESTER.—"Improvements in constructing and attaching knobs and handles of "drawers and doors, cupboard turns, and other such like "articles." The knob, of wood, china, or other suitable material, is attached to the drawer or door by a screw which enters from the inside of the drawer, &c. into a female screw in the knob. The female screw is not cut in the knob, but is made and fixed as follows:—"A cylindrical or nearly cylindrical piece of metal" is formed with a female screw at one end and at the other with a slit which "opens into the screwed end;" in the knob is a hole, "undercut or wider at the bottom than at the top;" the cylinder is dropped into the hole, and a small rod of metal is forced down, which causes the slit end to open "and engage under the edge of "the widest part of the opening in the knob." The cylinder may be let in "by a hole in the front of the knob," which may be afterwards filled up. This method of attachment "is particularly "applicable to attaching ornaments and such other articles as "may require to be attached to surfaces, when the said ornaments "and articles are made of wood or other material not sufficiently "strong to permit of an internal screw being cut therein." In a modification the connecting screw passes first through a hole in the knob and then through the drawer or door; a nut screwed on to the protruding end effects the attachment. The recess in the

knob made for the screw head is to be plugged up. A cupboard turn is constructed in the following manner :—"The case of the " turn," through which the rod or axis passes, is fixed in the door; the outer end of the rod is tapped, and the knob is screwed thereon and secured by a pin or screw passing through its neck into a slot in the rod; the inner end carries a tongue which slides between two plates and is pressed against the inner one by a coiled spring. The knob may be attached to the rod in the manner first described.

[Printed, 6d. Drawing.]

A.D. 1857, January 20.—N^o 160.

WALTON, FREDERICK.—"An improved plastic composition, " and in the application of machinery for manufacturing the " same." The composition is intended for use in the manufacture of veneers, mouldings, picture frames, door handles, door plates, curtain rings, tubes, and many other articles; the base is "shellac " or other suitable lac or resin." A quantity of lac or resin is immersed in cold water and agitated "to cause the wood or light " foreign matters to rise to the surface;" these are removed by skimming or otherwise, the water is poured off, and the lac is spread out "to facilitate the operation of removing the stones or " other heavy foreign matters." It is then boiled in water to render it soft or in a fit state to be kneaded or masticated in "a " masticating machine heated if requisite by steam;" the machine preferred is "the one ordinarily used for india-rubber or gutta- " percha." During the kneading hot water is poured on to the lac to remove "the colouring and foreign matters liberated by " the operation." The water and matters escape through a hole in the bottom of the case of the machine. When the lac is sufficiently purified, the supply of water is shut off, and the kneading proceeds until the lac is partially dried; fibrous substances (by preference the short fibres of cotton or wool) are now put into the machine and intimately incorporated with the lac. The proportions are for most purposes five pounds of lac to three quarters of a pound of fibre; and to improve the appearance colored fibre may be used, or "pigments, colours, or dye materials" may be added, "either in the masticating machine or otherwise." To keep the composition "perfectly plastic, or in a proper condition for being moulded or otherwise worked into shape" it is

placed in a machine of the following construction and action :— A cylinder is surrounded by a casing, and steam is admitted into the space between them through a pipe, the condensed steam being carried off by another pipe. The cylinder is closed by a lid, “through which is an opening” shut by the flat part of a lever; within is a piston with a screwed rod; the screw passes through a nut and carries a hand wheel. When a portion of the composition is required, the attendant raises the lever and turns round the wheel, thereby forcing a portion “to exude through the hole in the lid;” by depressing the lever “this portion is cut off and is placed in a mould or otherwise disposed of.” The cylinder may be heated by any other method.

[Printed, 6d. Drawing.]

A.D. 1857, January 29.—N° 262.

MALINS, ARTHUR.—“A new or improved method of ornamenting castors for furniture, lamps, chandeliers, cornices and cornice ends, curtain bands and curtain pins.” The substance employed in ornamenting these articles is “either horn or hoof, or such other animal substance or mixture or composition as has the same or nearly the same physical properties as horn.” The wheels of castors are made “either wholly or partly of horn;” in the former case they are connected to the horns by an ordinary axis; but the patentee prefers to fix a tube of metal in the hole of the wheel, so that the axis may “rub against the said metal tube instead of against the horn.” Sometimes the wheel is made of metal, and the sides are ornamented each by a disc of horn. Sometimes the periphery of a metallic or other wheel is surrounded with a covering of horn. In applying the invention to the other articles mentioned, portions of them are made of horn, or ornaments of horn are attached to such parts of them “as it may seem desirable to make of an ornamental character.” The horn may be used either in an uncolored state or stained black, or of any desired colour.

[Printed, 4d. No Drawings.]

A.D. 1857, February 21.—N° 504.

ADLER, ELKAN.—(*Provisional protection only*).—“Improvement in spring bed bottoms, said bottoms being applicable to other descriptions of furniture.” Spiral springs are arranged on a frame, each being provided with a cap or disc; the caps are

joined to each other. Flexible or other links are connected to the frame "by horizontally arranged spiral springs, thereby insuring greater elasticity, a more equal strain, and the retention of the vertical springs in an upright position.

[Printed, 4d. No Drawings.]

A.D. 1857, March 7.—N° 668.

URQUHART, WILLIAM.—(*Provisional protection only.*)—"A new mode of ornamenting household furniture." An ornamental design is cut or stamped out of paper, chintz, muslin, or similar material; it is fixed on the surface of the article by any adhesive matter and varnished.

[Printed, 4d. No Drawings.]

A.D. 1857, March 9.—N° 682.

COOK, EDWARD, and STOKES, JAMES.—"Improvements in 'certain parts of metallic bedsteads' namely in the laths, and in the mode of attaching them to the rails. Each end of the lath is cut into a circular or other suitable shape, and a hole is pierced therein; a pin, which fits into a hole in the rail, is fixed to the lath end by passing its head through the hole therein, and through a washer, and then riveting it firmly.

[Printed, 6d. Drawing.]

A.D. 1857, March 10.—N° 699.

REYNAUD, CHARLES.—(*Partly a communication.*)—"Improvements in the application of india-rubber springs to mattresses, 'sofas, chairs, and other cushions or articles of furniture.'" A mattress to which these springs (india-rubber rings) are applied is of the following construction:—The frame is "of openwork;" at the corners and at the middle of the sides (made in two parts) are hinges "having fixed knuckle plates and a moveable pin" so that the mattress may be taken to pieces without unscrewing the hinges. The frame carries cross bars which support longitudinal rails, and on its top crossed webbing forming the surface of the mattress "and placed diagonally to the supporting rails." On the under side of the crossings are sewn metallic forks which pass round the rails and carry each a bobbin on the lower arm; each bobbin has on it two grooves, and an india-rubber ring is doubled over a rail, each end passing round a groove. The rings are kept

in place by staples on the rails and by metal bars on the bobbins ; and each bar is provided with an eye through which a cord passes " to prevent the moving of the fork frames at the lower end." These springs " may be similarly applied to cushions for sofas, " chairs, or other articles of furniture requiring elastic or resilient " surfaces."

[Printed, 8d. Drawing.]

A.D. 1857, March 13.—N° 719.

HORNE, THOMAS, junior.—" A new or improved method of " ornamenting metallic bedsteads and wash-hand stands." " The " essence of my invention," says the patentee, " consists in orna- " menting metallic bedsteads and wash-hand stands by fusing " enamel " on them or on parts of them. The portions which are to be ornamented are cleaned, and the enamel is fused thereon " by methods well-known and commonly practised."

[Printed, 4d. No Drawings.]

A.D. 1857, March 26.—N° 845.

CLARK, WILLIAM THOMAS.—" A portable metallic spring mat- " tress." The frame is of metal and rectangular ; the side rails, of angle iron and jointed in the middle, have riveted or otherwise fixed to them cross bars, which support the base of the springs. From the side rails rise four brackets, to which longitudinal strips of metal, " formed of a double thickness of thin hoop iron," and two cross bars are secured ; diagonal laths are introduced between the strips or fastened to the two cross bars. At some of the points of intersection of the laths the springs " are attached by small " straps round the upper and lower coils." This upper lattice-work is made in two parts, each " terminating in the middle " in a cross bar. To hold the parts together a jointed piece is employed, consisting of two flat bars jointed to opposite ends of a link ; the length of the link " must be such as to embrace the " double thickness when folded ;" the flat bars are fixed one to each portion of the lattice-work, and the piece is held together by passing a bolt through the overlapping parts and the link.

[Printed, 6d. Drawing.]

A.D. 1857, March 26.—N° 847.

TOMASINI, DOMENICO.—“Improvements in the construction of “easy chairs and chamber commodes.” The first improvement relates to the application of a spring to the back of a chair, “in such a manner that it may be made to press against and support “the lumbar region” of the person seated. The second, to a “mode of adapting a night convenience to an easy chair.” The cushion is moveable; beneath is a moveable seat with an opening therein; and beneath this is the commode, made by preference of zinc; it rests on flanges attached to the chair frame; it is composed of a soil pan opening at bottom into a chamber, the opening being closed by a valve which slides in grooves. The chair back is hollow, by preference of metal, and forms a water reservoir which communicates with the pan by means of a flexible pipe provided with a cock. The square of the cock’s spindle is inserted into a socket, furnished with a lever for turning it and with an arm which works the valve. A cord attached to one end of the lever is hung “near the fore end of one of the arms of the “chair.” A sponge behind the valve cleans it each time that it is drawn back; and a small stream of water passing down a channel at the back of the pan keeps the sponge clean. To fill the reservoir a portion of the top of the chair back is hinged so as to be turned back. The arms and sides may be made hollow “to increase the capacity of the water reservoir.” The chamber is provided with a cap at one corner, by taking off which the contents can be removed. The patentee gives directions for shutting off the water supply, &c. when it is required to employ the commode.

[Printed, 8d. Drawing.]

A.D. 1857, April 8.—N° 982.

TAYLOR, BARNABAS. — (*Provisional protection only.*)—“An “improved arrangement of combined bed and utensil for the use “of invalids.” A funnel or pan, “resembling in form and uses “the ordinary water-closet pan,” passes downwards through the bedding and terminates above a receiver placed in a box or drawer beneath the bed frame. The top of the funnel is covered with a suitable lid and cushion.

[Printed, 4d. No Drawings.]

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A.D. 1857, April 8.—N° 986.

BILLING, MARTIN.—(*Provisional protection only.*)—"An improvement or improvements in the manufacture of metallic "cornice ends." This invention relates to the kind of cornice ends commonly called "drop ends," and "consisting of parts "connected together so as more or less to resemble fruits, leaves, "and flowers." The ends are to be formed "by stamping or "raising the same by dies out of sheet metal. The whole design "of the said drop ends being made in one piece, two sets of dies "are required, one for the right-hand end of the cornice, and the "other for the left-hand end." By this method the ends "are "made more economically," and they "are not so liable to fracture as those having soldered junctions."

[Printed, 4d. No Drawings.]

A.D. 1857, April 15.—N° 1070.

SAFRAN, JACOB.—"Improvements in locking or fastening "combinations of drawers in chests, tables, nests, or otherwise." This invention relates to a method "of fastening the whole of the "drawers by the shutting or locking of one of their number;" it is "principally applicable to pedestal writing tables" which are made "in detached parts fitting together." The fastening is effected by means of "locking rods" made in three parts, the middle being fitted into grooves in the framework of the table, the upper and lower into grooves in the framework of the upper drawers and the pedestals. The rods have nibs or projections corresponding each with a recess in the side of a drawer; they "are disposed at the bottom of the drawers," and the recesses are so situated that they enter therein only when the drawers are closed. The lower parts rest on springs, "which constantly press "them upwards;" the middle rest on the lower, and the upper on the middle, the springs "having power to lift the whole." Other springs act on the upper parts; "these upper springs are "stronger than the lower ones, and when free to act on the rods "depress them and permit the drawers to be opened." The rods are held in the grooves by small plates secured to the woodwork, and fitted in notches (cut across the rods) which restrict their up-and-down motion. The middle parts have each (in addition to the nib which takes effect on the adjoining drawer) a piece which projects into a recess in the sides of the table drawer; this piece

" is inclined on the upper surface in both directions;" and, according as its drawer is open or shut, allows the upper or lower springs to act and to move the rods and nibs down or up. The upper part of each rod is "formed in two parts," which are "placed side by side in the same groove;" the short one carries the nibs and is acted upon by the longer; a spring forces it up, "when it is released" by the longer, "which bears upon it and forces it down" by means of a projection. "The sliding rods may be modified to suit the combination of drawers, and may require only one locking sliding rod; as, for instance, the upper drawer of a chest of drawers may be the locking drawer." Thus by closing and locking one drawer the whole number will be secured. "The locking drawer may be made to act directly on the rods without the intervention of springs."

[Printed, 8d. Drawing.]

A.D. 1857, April 27.—N° 1185.

MACINTOSH, JOHN.—"An improvement in the manufacture of air beds, cushions, and other like inflated and fluid-tight apparatus or bags." India-rubber tubes, "about five inches in circumference when inflated and of such a texture that it will readily stretch and yield to the pressure of air forced into it by the mouth," are enclosed in cases "of tubular-knit fabric" which should "when unextended be about eight or nine inches in circumference, and be capable of stretching to double that size." The cases with the tubes inside are tied at one end and inflated "until they become about twelve inches in circumference," when they are tied at the open end also. To complete an air bed or cushion a series of the cases is secured between two surfaces of tick or other fabric which are sewn through to keep the cases in place. If the bed or cushion is to be packed away, the ends of the tubes are furnished with valves; and sometimes for safety's sake the tubes are tied at intervals. The tubes may be filled with water so as to make a water bed; and sometimes two tubes are employed, one inside the other; the inner one is filled with air and the outer one with water.

[Printed, 4d. No Drawings.]

A.D. 1857, May 2.—N° 1239.

CHÂTEL, CHARLES. — (*Provisional protection only.*)—"Improvements in the manufacture of blinds, screens, reflectors,

" & other articles of a similar nature." Forms, corresponding to the designs required, are cut out of the fabric which is to constitute the ground of the blinds, screens, &c., and " pieces of " differently coloured stuffs " are glued on to the forms, " so as " to hide, and at the same time to ornament, the joints of the " different parts." On these joints designs are printed with a mordant, which is sprinkled with velvet powder or shearings, or with wool or any other matter reduced to a powder.

[Printed, 4d. No Drawings.]

A.D. 1857, May 2.—N^o 1247.

BOOTH, JOHN PETER.—"An improved manufacture of stuffing " for beds, couches, cushions, and other seats." The material employed is "short tan-yard hair or hide hair;" it is washed clean, immersed in a glutinous solution "produced by boiling down " fleshing in water, or dissolving glue therein," and purified by boiling in a solution composed of soda, quicklime, and water; it may be dyed if required. It is then ready for use as a stuffing either alone or mixed with other materials. The patentee uses the following proportions for two cwt. of hair:—fleshing, 3 lbs; water, 200 gallons; and for purifying, soda, 14 lbs.; quicklime, 28 lbs.; water, 200 gallons.

[Printed, 4d. No Drawings.]

A.D. 1857, May 2.—N^o 1249.

COOKE, TERTIUS JOHN.—"Improvements in the manufacture " of knobs, roses, and escutcheons used for doors, drawers, " shutters, and other similar purposes." These knobs are made " of part cast brass and part sheet iron, or part cast iron and the " rest sheet brass, the roses and escutcheons being formed of " sheet iron only or cast iron." The surface or such portion of the knob as may consist of iron is japanned, enamelled, inlaid, or otherwise ornamented, and the brass portion is burnished or bronzed; the roses and escutcheons likewise are ornamented. The mode of manufacture is as follows:—The face of the knob is stamped or pressed in any of the ordinary methods by which " a " thin shell of iron, cupped or hollowed into a hemispherical " form," is produced. The neck, "previously cast in brass, is " then secured to this shell by soldering, brazing, pressure in " dies, or other suitable means." The entire surface of the iron

shell is now japanned, and "whilst the japan is in a plastic condition" the inlaying is to be done. The knob is then "stoved to harden the japan," and afterwards "placed in the chock of a lathe and polished on a buff." The brass neck also is turned in a lathe "to remove any irregularities left in the casting," and afterwards burnished, or polished, or bronzed. If the knobs are to be ornamented with colored designs, the japan is hardened "previous to adding the ornamentation, which is to be then applied by hand or other suitable means." The roses and escutcheons "are produced in the same manner as the shells," and are "similarly treated in ornamenting them." Knobs of a somewhat commoner description are manufactured "by casting the necks of malleable iron or even common cast iron and uniting such necks to shells of sheet iron" by pressure, soldering, &c., and then ornamenting them as before described. "The same mode of ornamentation" may be applied "to the ordinary knobs, roses, and escutcheons now made."

[Printed, 4d. No Drawings.]

A.D. 1857, May 6.—N° 1275.

GEYELIN, GEORGE KENNEDY.—"Making oscillating spring laths for beds, couches, and other purposes." Two sets of springs are employed, end springs and centre springs; the former, of steel or india-rubber, are held and compressed between the flaps of hinges which are hooked to the side rails; the lath ends are connected to the upper flaps by expanding pins. The latter are spiral springs in frames or boxes; the laths pass through the tops of the boxes, and stretchers support pins projecting from the bottoms of the springs. "Underneath the bed" are "pins to allow the box to open." The centre springs may be of sheet steel and rest on the stretchers. "There are various means of fixing the springs to the laths and the laths to the bedstead."

[Printed, 8d. Drawing.]

A.D. 1857, May 12.—N° 1338.

DUBOIS, JULIEN CHARLES.—(*Provisional protection only.*)—"Improvements in castors." Each castor is made with one large and several small spheres, the large one forming the roller. "Directly above this large sphere there is one or two smaller spheres, one above the other, which bear the weight of the

" article of furniture to which a castor is fixed, and reduce the friction on the larger sphere." There are other spheres around the large one, "in order to reduce the lateral friction, and to facilitate the rotation of the larger sphere."

[Printed, 4d. No Drawings.]

A.D. 1857, May 15.—N° 1370.

AIZLEWOOD, JOSEPH.—"Improvements in hat and umbrella stands." This invention consists "in introducing into hat stands and umbrella stands, or into articles of furniture being a combination of the hat and umbrella stand, mirrors or glass," which form "an integrant part of the design." The accompanying drawing exhibits a highly ornamented design for a hat and umbrella stand in which a mirror is placed in the middle of the hat stand. The patentee adds that "this combination of the hat mirror with the hat and umbrella stand affords considerable scope for variety of design and the application of ornament."

[Printed, 6d. Drawing.]

A.D. 1857, June 6.—N° 1590.

SHAW, THOMAS GEORGE.—(*A communication.*)—"Improvements in bedsteads" portable and suitable for travellers, &c., being composed of a series of frames or boxes which slide one into another. The cover, fitted with drawers, is united to the main frame by quadrant hinges; it has hinged to it two standards serving as legs when it is thrown back. The end frame is a box with a "fall-down door;" a lock on the door secures it and also the cover when the bedstead is closed up. The sliding of the frames is regulated by pins and grooves. Round the inside of the cover and the top side of the frames canvas is stretched and fastened; a space is left unfastened in the cover to allow the canvas "to yield to the pressure of the head."

[Printed, 6d. Drawing.]

A.D. 1857, June 22.—N° 1745.

MACKENZIE, THOMAS.—(*Provisional protection only.*)—"Improvements in the internal decorations of those parts of buildings to which window draperies are to be affixed, and in the arrangement and construction of the curtain fixtures." The architrave of the window is so arranged and constructed "as to make it

"serve the purpose of a cornice;" the curtain rod is "a rectangular-shaped bar of metal;" it is supported by "brackets placed within the architrave." Oblong slides supply the place of curtain rings, and the cords for drawing them are "at the outside of the architrave, which is suitably ornamented to conceal the same."

[Printed, 4d. No Drawings.]

A.D. 1857, June 25.—N° 1786.

GREEN, JACOB.—(*Provisional protection only*).—"Improvements applicable to bedsteads and other articles of furniture, for the purpose of excluding therefrom bugs and other similar insects." A "prop or foot" is screwed to each leg of the article; the prop "fits into a socket in the centre of the bottom of a cup-shaped vessel" which stands on the floor. The vessel is to be partially filled with water; it is provided with an "overflow pipe near the top." On the top of the article is placed a cover of wood or close material, which has all round the outer edge a small trough of tin containing water.

[Printed, 4d. No Drawings.]

A.D. 1857, July 28.—N° 2051.

HALLÉN, EDWARD.—"Improvements in the construction of bedsteads and similar articles to recline or sit on," being, as the patentee professes, improvements in a barrack bedstead, called "Hall's bedstead." The alterations and modifications are detailed; all or nearly all of them are included in the following description of a bedstead. The frame is made in two separate parts, the foot sliding into the head part. At the corners of the upper cross bar of the head part are holes to allow the tops of the head legs to pass through; these are secured by wedges driven through holes therein. A head-board, consisting "of a piece of sheet iron fixed to half-round or other shaped iron at top and bottom, at the ends of which eyes are formed," drops over the upper part of the legs. The lower cross bar of the head part has "returned ends" to stiffen the frame; in these ends are holes which are continued through the top of the angle iron forming the sides. The foot part is supported on four legs (with rollers) which "are fixed by pins and wedges to fit universally;" the projections on the tops of the middle legs catch in the holes of the

lower cross bar and prevent the foot part from being drawn out too far; the projections are kept firm in their places by steady pins. This bedstead can be made up "into one compact package," the legs and head-board being packed between the frames.

[Printed, 10*d*. Drawing.]

A.D. 1857, July 29.—N° 2070.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.—(*Provisional protection only*).—"Improvements in the manufacture of children's cots and metallic bedsteads." In metal cots "which have canework applied thereto," the "rough protruding parts" are cased in or covered over with metal or other suitable material. In manufacturing cast-iron corners of bedsteads "in order that they may be electrotyped with brass, they are first ground or polished and then placed in a suitable bath." The same plan is adopted in coating other articles: similarly the bars or rods which are used in forming the head and foot rails or frames "are first ground or polished, and when put together are subjected to a suitable bath."

[Printed, 4*d*. No Drawings.]

A.D. 1857, August 1.—N° 2091.

HARRIS, WILLIAM JEWETT.—"Improvements in the construction of dining and other tables." Cross levers or lazy tongs are fastened at their extremities to the table frame, their centres being fixed to the cross bars of the slides; they are worked by a screw "turning freely in a collar" and passing through and retained in "an internal screw nut" fastened to the first cross bar. Motion may be given by a rack, pinion, and lever. More than one screw may be used "when placed so as to screw up beside or over each other." In this arrangement "the front ends of the second, third, and others are lengthened so as to be more easily rotated by the moveable winch handle; or the handle may be lengthened."

[Printed, 8*d*. Drawing.]

A.D. 1857, August 5.—N° 2117.

BOTTURI, SEBASTIEN.—"The making of movable chairs and seats of every kind and description, to be called Botturi's movable chairs and seats." This invention "permits of disconnecting the seats from chairs." The seat frame is "furnished with

"all the necessary accessories for a seat except the stuff with which it is to be covered." Round the frame, "at the edge of the varnished wood," a channel is cut; within it is concealed a strong wire having the stuff sewn to it. A metal band, of exactly the same shape as the wire, and covered with lace, fringe, &c. is fixed on by eyed pins, screws, or springs. In another arrangement, a spring is placed in the interior of the seat and back, "which allows of opening and shutting the chair frame at will," and of the ready removal of the seat. "The exterior of the chair frame is furnished with two hinges." In another, the back is lowered behind by means of a spring and hinges. In another, "frame drawers" are used, which "may be taken out at pleasure." In another, the frame, covered with stuff, is lowered and a cushion for daily use is placed thereon; the frame is raised, when required, and fixed by eyed pins, screws, or springs.

[Printed, 8d. Drawing.]

A.D. 1857, August 31.—N° 2286.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.—"Improvements in the manufacture of children's cots and metallic bedsteads." Provisional protection was received for this invention, dated July 29th, 1857, No. 2070, to the abridgment of which the reader is referred. The covering plate is generally of iron, but a cap of wood may be used, either being fixed on by rivets. If the cot is entirely of metal, the sides and ends are by preference of zinc, perforated or not, and corrugated in a horizontal, but sometimes in a vertical direction. At the upper and lower edges the metal is turned over the rails into a tubular shape, and thickening pieces are riveted or otherwise fastened at the ends of the corrugations; or the edge of the metal is doubled over previous to corrugating. If flat plates are used, the edges are finished in a similar way; or the plates may be indented or embossed at intervals and perforated. The pillars are attached to pieces projecting from the rails. The second part of the invention will be found described in the before-mentioned abridgment.

[Printed, 10d. Drawing.]

A.D. 1857, September 10.—N° 2353.

LAWFORD, HENRY.—"An improvement in the manufacture of dining tables, expanding and contracting tops, applicable also

"to other expanding and contracting planes." The extra flaps rest, when not in use, "underneath and parallel with" the fixed tops, for which purpose the side rails are lowered and the slides are level with the tops of them. As the table expands, the top flap, "attached to one of the tops by a catch or ordinary fastening," is raised into the plane of the table by means of lifting movements consisting of soft rollers and supports, which drop "perpendicular on the slides" supporting the flap. As the expansion continues, the under flap is raised into the plane by lifting movements composed of jointed pieces and stops which fall and fix them when they are perpendicular. These movements make "an incline plane with the slides when the table is closed." To contract the table the fixing stops must be lifted up, thereby allowing the jointing pieces to fall.

[Printed, &c. Drawing.]

A.D. 1857, September 29.—N^o 2498.

WHITE, WILLIAM WALL, and BULL, WILLIAM.—"Improvements in rollers applicable for blinds, maps, and other purposes." The patentees claim as their invention "the use of an india-rubber spring of any convenient form or a spring of any substance fixed to the framework on which the roller revolves;" to the spring "a cord is attached, the other end being passed over or fastened to the wheel of the roller, which has a ratchet for a catch on one side and a drum (smaller in diameter than the roller)." Sometimes they fasten a pulley to the spring, "the cord fastened to the pulley wheel passing through the pulley and being fixed to the bracket or framework of the window." Sometimes they dispense with the spring, "the roller being made to revolve and the blind being fixed in any position by a spring on the bracket." In the Provisional Specification the mechanism and arrangement differ from the above in some respects. The roller wheel is placed at one end of the roller and the ratchet wheel at the opposite end; the roller wheel consists of "a peculiar combination of cog wheels," namely, "a cog wheel with drum at back for the cord to wind on," and "a cog wheel attached to the roller" and working with the other. There are mentioned also a "catch for the cord," a "metal eye screwed in the roller," and a "half split ring or hook" which is passed through the eye. They describe also a "peculiar

"method of detaching the cloth, &c. from the roller;" namely, by means of the before-named eyes (or [staples]), and the rings or hooks which are sewn to the cloth.

[Printed, 8d. Drawings.]

A.D. 1857, October 14.—N° 2624.

ELLENA, ADOLPHE BARTHÉLEMY.—(*Provisional protection only.*)—"A new mechanical means of rocking cradles." The cradle is suspended between two uprights on pins resting in slots; beneath is a casing bolted to one of the uprights. In the casing is a frame "supporting an axle having a crank at one end thereof, and carrying a toothed wheel, a drum (enclosing a motor or driving spring), and also a ratchet, into which takes a catch fixed on the framing." The toothed wheel gears into a pinion on a second shaft; this gears into one on a third, and this again into one on a fourth shaft. This lower shaft "carries a flyer or balance and crank, from one end of which the arm of the balance rises vertically, and is attached to the cradle." A wheel and catch placed near the first shaft "gives the option of arresting the motion."

[Printed, 4d. No Drawings.]

A.D. 1857, October 26.—N° 2711.

FAIRCLOUGH, JAMES, FAIRCLOUGH, JOHN, and COWAN, JOSEPH.—"Improvements for suspending and working window hangings and other drapery curtains." The curtains are suspended to a series of cross levers or lazy tongs. Several arrangements are described. The levers are fitted to a longitudinally grooved or slotted lath, through which they work by means of cords and pulleys. "The upper end of the extreme lever of each set" is provided with a pair of antifriction rollers, "which travel on the upper surface of the lath." The levers may be constructed with "double joints" at top and bottom, so that they "can be carried round a curved or polygonal-sided window;" or they may be connected by a "loose joint" when they are "required to work in a curved or oblique direction." Again, they may be placed in a "circular metal tube, with a longitudinal slot formed in its lower portion, through which the heads of the levers work," and in which the rollers move; or in a wooden rod "formed in two parts and grooved or hollowed out" to admit

the heads and rollers. The curtains are hung to rings on the lower ends of the cross levers, or by hooks passing through holes therein, or to rings on the ends of "pendent straps, which are attached to the pins of the upper joints of the cross levers, and which are slotted to admit studs formed on the ends of the axes of the lower joint of the cross levers." These straps may be attached to the "centre axis of the cross levers;" in this arrangement each set of levers is fastened to a fixed axis from which they expand and contract.

[Printed, 8d. Drawing.]

A.D. 1857, November 2.—N° 2783.

ILES, CHARLES.—"Improvements in wardrobes, or similar receptacles for articles of dress, and in stands, frames, and pins for holding or suspending articles of dress." The wardrobes, combined with looking-glasses, are either wholly of metal, or the framing is of wood with metal panels inserted, or the framing is of cast metal with panels of wrought metal plain or corrugated. Sometimes the various parts are made separately and joined by screws and nuts or by dovetails. Portable and ornamental frames with pins are made with loops at the top, and at the bottom if required, for suspension on nails. Mirrors may be let into these frames; portions of them, and of hat and umbrella stands, are constructed of rods or tubes which are joined by casting ornamental junction pieces on their ends. Ornaments may be cast on other parts also. The pins are made of two semi-tubular pieces of sheet metal soldered together, and an ornamental head and bottom are screwed on. Sometimes they are made of glass, and the interior is coated with metallic foil or other ornamental substance.

[Printed, 8d. Drawing.]

A.D. 1857, November 5.—N° 2806.

SIMPSON, GODWIN RATLER, and SIMPSON, DAVID CALDOW.—"Improvements in spring blinds." For roller blinds the patentees "use an india-rubber band or cord, which is made fast on one end of the top lath, or on top of the framework that supports the roller;" it is carried "about one-half the length of the framework," and a piece of catgut or cord "sufficient to reach the other end of the framework" is fastened to it.

The end of the catgut is "brought over a wheel through the framework, and is attached to a barrel that is fastened on one end of the roller." On pulling down the blind, the barrel is made to revolve and the india-rubber to expand; and "by lifting a cog, the india-rubber spring retracts and raises the blind up." For Venetian blinds they "use a roller instead of small pulley wheels;" the roller is fixed to the top lath or frame, and "two or three lines pass down the Venetian blind and are made fast to the roller." By pulling one line "the blind is drawn up and the lines pass round the roller, which is stopped by a cog, thereby doing away with having more cords than one in the hand."

[Printed, 4d. No Drawings.]

A.D. 1857, November 12.—N° 2854.

DE SIVRAY, FRANÇOISE HONORINE FELICIE BERTRAND.—"Improvements in the construction of bedsteads." This invention consists "in constructing a table in such a manner as to be convertible into a bedstead." The table top slides in a groove and forms the head; it has fixed in a groove in its under surface an iron bar, to which it is hinged, and which is slotted at each end to receive guides. Between the sides of the table is a folding iron frame provided with two folding legs. Cords for supporting the sacking pass through rings or staples on the frame and on plates "fixed internally at the lower part of the sides of the table." The end frame "is provided with hinges, and is let down when the bed is made."

[Printed, 6d. Drawing.]

A.D. 1857, November 12.—N° 2857.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Julien Charles Dubois.*)—(*Provisional protection only.*)—"Improvements in castors." Provisional protection was granted to Mr. Dubois for this invention, dated 12th May 1857, No. 1338. The reader is referred to the abridgment of that date.

[Printed, 4d. No Drawings.]

A.D. 1857, November 24.—N° 2939.

SEARBY, WILLIAM.—(*A communication.*)—"An improved form of elastic spring applicable to bedsteads, sofas, chairs, the

"padding and seats of carriages, and other similar purposes." The spring is a piece of elastic metal, wood, or bone, "compressed into a curved form." Each end is looped or bent freely round one side of a buckle. The opposite side of the buckle is attached to a looped strap, which is fastened to the frame of the article of furniture. Other modes of attachment:—Cuts are made in strips of hoop iron; the portions between the cuts are turned back to form loops or hooks; on these the buckles are secured, and the strips are fastened to the frame. The loops may be formed in the side rails of a bedstead. A button may be screwed or otherwise fastened to each end of the spring, and the button neck may work in a slot cut in the strap or hook which is fixed to the frame.

[Printed, 6d. Drawing.]

A.D. 1857, November 28.—N° 2960.

PEACH, BENJAMIN.—(*A communication.*)—(*Provisional protection only.*)—"Sundry improvements in bedsteads, elastic bed bottoms, the seats of chairs, sofas, and other similar articles." India-rubber bands or rings, spiral or other shaped metal springs, or straps of any elastic substance are employed in the manufacture of bed bottoms, seats, &c. The under framework "is made with a number of hooks to support the rings or bands," and "between the rails of the framework hooked rods descend" from the sack-ing or other material forming the seat. The hooks of these rods "catch into the rings or bands."

[Printed, 4d. No Drawings.]

A.D. 1857, December 2.—N° 2990.

HETHERINGTON, JOSEPH.—(*Provisional protection only.*)—"A new or improved manufacture of the bowls of castors for furniture." The bowls are of metal and have a form "nearly resembling an oblate spheroid;" they are made in two pieces "by casting, stamping, pressing, or otherwise." Each piece has a cup-like shape, "such that when their edges are joined together by soldering or otherwise they constitute a hollow bowl." On one of the cups a stem is cast or fixed, "rising from the middle of the inside," and projecting through a hole in the other cup. A hole is drilled through the stem, and the pin on which the bowl turns, and by which it is connected to the horns, is passed

through the hole. "There is thus a bush or bearing for the axis, " which bush or bearing extends across the bowl."

[Printed, 4d. No Drawings.]

A.D. 1857, December 3.—N° 3000.

HAZARD, ROBERT.—"Improvements in a self-acting reclining " chair or couch." The arms and legs are framed together, and the back and seat are hinged together. The front part of the seat is suspended from the arms by links, and the back is hung to the hind part of the arms; or the back, seat, and arms "are framed " together and supported on centres on the framed legs or sup- " ports." By the use of stops "the inclination may be made " fixed and permanent." If the chair is made without arms, the links are of a different shape and are fixed under the seat; and the back "is supported on centres above the seat." If a folding chair is required, "the arrangement for centering and fixing" is the same as in the first description, except that the arms are bolted or riveted to both front and back links, and are screwed or otherwise fastened to "cross supports when placed in the proper " bearings provided on the same."

[Printed, 6d. Drawing.]

A.D. 1857, December 8.—N° 3037.

DOLMAN, HENRY.—"An improved stand for 'cheval' and " other dressing glasses." An oblong bar, provided on its face with a rack, slides vertically in a hollow pillar which is secured to a stand. The bar may be round, the side carrying the rack being flattened; it is raised and lowered by a pinion and handle, and kept in position, when raised, by a ratchet and fall. The upper end of the bar is rounded, and carries a boss "capable of turning " upon its vertical axis." The boss supports a horizontal axle, to which the glass is attached by brackets, and which is fixed and held by a clip and tightening screw.

[Printed, 6d. Drawing.]

A.D. 1857, December 11.—N° 3058. (* *)

DENNE, WILLIAM.—"Improvements in apparatus used for " lifting patients off beds, and other surfaces used for reclining " upon." These are as follows:—"A frame is arranged some- " what larger than the bed or surface," which frame "is sup-

"ported by connecting links or parallel bars, so that it can be readily removed upward and off the bed or surface." The frame may be arranged to move in any direction; it is provided with straps with which to raise the patient. "The frame may be made in parts, and suitably formed to admit of one or more parts assuming an inclined position."

[Printed, 6d. Drawing.]

A.D. 1857, December 14.—N^o 3073.

PARKER, JOSEPH.—"Improvements in the construction of bedsteads," particularly of bedsteads for the use of invalids. Some of the top laths are removed, and in their place is introduced a moveable frame, the forward part of which is slotted and mounted on pins secured to the side rails. Beneath the frame is a cross shaft carrying at its middle a sector rack, which gears into a pinion on another cross shaft mounted in bearings on the side rails; the latter shaft carries a worm wheel, which is actuated by a worm on a longitudinal shaft formed at one end with a square head for the reception of a winch. The head board is moveable; it is connected to the frame by curved arms that turn upon centres fixed in the frame; the arms "are provided with tails," which project below the frame and are united by rods to the cross shaft carrying the rack. By the above arrangement the frame and the head board "are caused to move simultaneously," the latter rising "nearly vertically between the head posts." The foot board is arranged "to admit of its being moved up to the person reclining on the bed," and to serve as a table or a reading desk:—it is mounted on centres in the ends of arms attached to side arms "on the ends of a transverse rocking shaft, to which motion is communicated by causing a worm to take into and drive a toothed wheel on the shaft, the spindle of the said worm being actuated by means of a winch handle adapted to the square end thereof." The side arms are made of tubes, so that they can slide in and out. Thus the foot board can be raised in the arc of a circle until it assumes a horizontal position; being mounted on centres, it may be turned thereon and secured by thumbscrews at any inclination; it is also provided with buttons to prevent a book or desk from slipping off. Moveable arm rests may be "placed on the table" and "made to extend back to the head board." The mattress is divided

into sections, and the bolster is attached to the head board by straps or other contrivances.

[Printed, 10d. Drawing.]

A.D. 1857, December 22.—N° 3144.

MAW, EDWIN.—“Improvements in ornamenting and strengthening metal tubes and rods with wood, applicable in the manufacture of bedsteads and other articles of furniture and framings, and also in the manufacture of the joints or connections of the posts and framings of bedsteads and other articles of furniture and frames.” When the ornaments “are to be in the centre or parts intermediate of the length of a tube or rod,” they are placed, after being turned, carved, or shaped, on the tube or rod and connected by pieces of wood which form “longitudinal ribs.” Ornaments of wood are placed also on the ends of the tube or rod. To unite the posts and rails male dovetails on the former are let into female dovetails in the latter. The male dovetails are cast on the posts or made on separate bosses and fixed on. If the posts are of wood, plates are added to the dovetails. The female dovetails “are made by preference with parts in the form of angle-iron” to fit within the angle-iron of the rail.

[Printed, 10d. Drawing.]

1858.

A.D. 1858, January 7.—N° 23. (* *)

LAVATER, MANUEL LEOPOLD JONAS.—“The application of the principle of exhausting air, as used in plate-holders, breast pumps, for pegs.”

This invention consists in “the application of the principle of pneumatics,” to cause “pegs,” “brackets,” “fixtures,” “forges,” “reflectors,” &c., and generally to all articles or goods that are required to be supported, or to adhere mechanically to solid surfaces, such as glass, walls, panels, &c.

A suitable vacuum for the above purpose may be obtained by means of india-rubber bottles or balls, pumps, &c., but the patentee prefers the following mode:—“On the edge of a wooden cup is

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" fixed an india-rubber disk (as used in plate holders), and on the top of the said cup is placed a rotary cylinder, the inside of which is a female screw or knot.

" The cylinder and cup are traversed through the centre by a square stem, the end of which is a screw working in the knot of the cylinder; to the other end of the stem is attached a flat button, which is fastened to the disk."

" The method of using the above-named pneumatic utensils are as follows :—The disk should be placed on any solid surface, when, by turning the cylinder, it acts on the stem which draws the india-rubber disk and creates a vacuum, greater or less, according to the modulation of the screw, which, when done, the utensil will remain secure. For disadhering the said utensil, unscrew the cylinder till the disk is forced flat."

[Printed, 4d. No Drawings.]

By Disclaimer, filed 11th December, 1858 (N^o 23.*) the Patentee alters the title of his invention to as follows :—" The application of the principle of exhausting air for fixing pegs to solid surfaces."

A.D. 1858, January 7.—N^o 27.

REILLY, JAMES, the younger.—" Improvements in chairs and seats of various descriptions." The chair is made in two separate parts; the upper consists of the back, arms, and seat, and has fixed underneath a plug or rod; the lower, consisting of a top surface and legs, or of top and bottom surfaces united by legs, has fixed in the middle of the top surface a cylinder in which the plug moves. Within the cylinder and around the plug is a spiral spring, "so that as often as the seat is pushed down it may rebound." There are handles at the sides "for the purpose of turning the chair round and assisting in the jerking or other movements." More than one cylinder and plug may be used; or in their stead guides and rollers may be employed; treadles also can be attached to the rod "to give the vertical movement." A double chair with a small table between them can be made, "which also forms a cradle by removing the table." The invention is applicable to chairs of all kinds, and to perambulators, the wheels of which the patentee tyres with india-rubber or gutta percha.

[Printed, 6d. Drawing.]

A.D. 1858, January 7.—N° 30.

MAW, EDWIN.—“Improvements in the construction of metallic “bedsteads and other surfaces to sit or recline on.” Each lath is formed at one end with a slot for attachment to one side or end rail, and at the other with a rotating stud which has its “fastener” on the under side, or with a slot for the reception of such a stud. The rail which admits the fastener has fixed on its under side a curved incline, against which the fastener presses when partially turned, the pressure acting at once as a fastening and a stretcher. In forming the surface or frame to bear a mattress, &c. angle or bent iron is used in place of flat laths, and bent springs are fixed thereto alternately, that is, one end to every other lath, in such a manner that their ends “are capable of free movement on their “respective points of bearing.”

[Printed, 10d. Drawing.]

A.D. 1858, January 12.—N° 48.

ROBERT, ANDRÉ FRANÇOIS EMILE.—(*Provisional protection only.*)—“Improvements in the manufacture of curtains and “hangings for walls and other places.” The curtains and hangings are made of thin sheets of caoutchouc ornamented in the following manner:—Two metallic plates, “in which ornamental devices are engraved or sunk,” are set “one above and “one below a case or frame, with a sheet of prepared caoutchouc “between each plate and the case.” The whole is made air-tight by means of “wedges and tie frames,” placed in a heating apparatus and kept there “until the enclosed air is sufficiently “expanded to force the sheets of caoutchouc into the sunk “devices of the plates.”

[Printed, 4d. No Drawings.]

A.D. 1858, January 27.—N° 147.

BIRD, ARTHUR.—“A new or improved spring platform or “mattress for bedsteads and other articles used for sitting, lying, “or reclining upon.” Coiled springs are set on a base of wood; on the top of each or of two or more is placed a rectangular or other shaped piece of wood. The springs are fastened to the base and to the pieces by staples, and to prevent noise a piece of fabric is spread over the base and under the pieces. Webbing is nailed or otherwise secured lengthways and breadthways to the boards

both on the upper and lower side. The whole is covered with "a quilted or other covering or stuffed cushion." The mattress may be made in two or three parts.

[Printed, 6d. Drawing.]

A.D. 1858, February 9.—N° 240.

MILLARD, RICHARD.—"A portable chair." The back, arms, and seat are supported by two cross frames of metal, wood, or other material. The back is hinged to one cross frame, and the inclination is regulated by a toothed quadrant and pin on each side, the quadrants being united by a bar. The arms are riveted to the back and to front props which are attached to the other cross frame by thumbscrews. The seat (a piece of canvas) is fastened to the top of the cross frames and continued up the back, or the back may be "a piece of perforated metal." At the upper part of the back a bar or frame is riveted, forming a leg when the back is down. To form a couch a foot rest is added, which is "hooked on to the frame of the chair when in a sitting posture."

[Printed, 6d. Drawing.]

A.D. 1858, February 12.—N° 268.

CLIFTON, JAMES.—(*A communication.*)—"A new article of "nursery furniture, or gymnastic exercising chair and support "for children." Four limbs, composing the skeleton frame of the article, unite at the top in an arch and are provided with castors at bottom; two hoops keep the limbs in position. Elastic cords, connected by straps and buckles at their upper ends to the limbs, support "a broad padded ring," to the inside of which is attached a seat, "so formed as to permit a child's legs to hang "down therefrom." A piece of drapery is appended to "hide "the seat and protect the child's body and legs from cold, "draught, &c." The seat may be dispensed with. Springs may be fitted to the ring from below. The number of limbs is not limited nor their length, nor need they meet in an arch.

[Printed, 6d. Drawing.]

A.D. 1858, February 23.—N° 349.

TELFORD, RICHARD, and HOPE, MICHAEL.—(*Provisional protection only.*)—"Improvements in castors for furniture." The

patentees thus describe their invention:—It “consists in the application to the sides of the bowls of castors of gutta percha, mother-o’-pearl, papier maché, porcelain, or other earthenware, glass silvered, gilded, or coloured on the back, marble, slate, wood, iron, and vegetable ivory, such materials being used either plain or coloured. These sides are formed in discs which we prefer to be convex on the outer face, each of such discs being inserted in a circular groove formed on the side of the wheel or roller and fixed therein by turning over the edge of the wheel or roller, so as to confine the outer part of the disc in the groove, or the discs may be otherwise applied thereto.”

[Printed, 4d. No Drawings.]

A.D. 1858, March 4.—N^o 428.

HIPKINS, GEORGE FREDERICK.—(*Provisional protection only.*)

“Improvements in constructing and attaching knobs and spindles, and in connecting knobs to doors, drawers, and other articles.” The first part is accomplished by forming the spindle with a screw at each end and with a square part at or near the middle, and by screwing one end into the knob and sliding upon the projecting part a nut or washer, which so engages in the knob as to render it incapable of turning, “and thereby prevents the spindle from unscrewing from the knob when the knob is turned.” To effect the second part the spindle may be screwed into the door or drawer, or a flanged collar “may be inserted from inside into a hole formed in the door, &c.,” and the spindle may be passed through and screwed into the collar. If the knob is of metal, “the spindle may be cast in or otherwise attached to the knob and made to engage with the flanged collar by screwing.” If the spindle is to be adjustable, “so as to accommodate its length to the thickness of the door or other article,” it is made square, and a screw thread is cut on its angles; it “is made to enter the knob to a greater or less extent by sliding or screwing therein. The sliding may be effected by a screw collar attached to the neck of the knob by burnishing.” When the spindle is made to screw directly into the neck, the knob “is fixed by a collar sliding on the square spindle;” this collar has projections “which engage in recesses in the neck.”

[Printed, 4d. No Drawings.]

A.D. 1858, March 6,—N° 460.

CAP, PAUL ANTOINE.—“An improved construction of billiard tables for drawing rooms,” whereby the several parts of which they are composed “may be put up together or undone easily and quickly.” Three methods of construction are described, by the second of which the billiard table is convertible into “a dining or other table.” 1. The framing is composed of four parts “made of oak veneered with mahogany, ebony, or other rich wood,” and united to the legs by hooks. Two moveable slabs are sustained by the framing and by cross pieces, and, when hinged together at their ends, “form one uniform surface which carries the cloth;” they may be longitudinal slabs and joined by “a long sunken hinge similar to the snuff-box hinge;” tongues or supports are placed on the under surface to ensure “rigidity and horizontality.” The cushions “are mounted on and fixed to the framing by the aid of countersunk screws, the heads of which are so formed as to be worked upon either by a screw-driver, a claw key, or spanner, and the holes left above the screw heads may be filled in with wooden or ivory corks.” The legs have each a screw at the base for lengthening or shortening, and spirit levels may be sunk in any part of the framing. A case is made to receive the different portions; a sideboard, sofa, or other piece of furniture may be constructed for the purpose. 2. The frame (also in four parts) and the legs are bolted together. The table top (also in two portions hinged together) is screwed to the frame, and two cross pieces are fixed to the frame by hooks or clasps and screw plates; some of these plates “are fixed near the top of the legs,” and serve to support them laterally “with the assistance of screws and bolts; and when the screws are unscrewed, from the thickness of the plate the legs may be made to incline so as to in part shut in and to occupy but little space.” The cushions have projecting pieces for insertion into sockets in the table top; and when the cushions are taken off, leaves, having suitably formed hooks, can be added by slipping the hooks into the sockets. As a dining or other table does not stand so high as a billiard table, adjusting screws in the legs will remedy the difference, but “a simpler way is to have supporters of cast-iron or other material placed under such legs, and afterwards regulate the height of the table.” To increase its solidity “the body of the table underneath the carcass” may be weighted

“ by placing moveable shelves on ledges to be formed on the inner parts of the legs and piling sand bags or other heavy weights thereon, or other contrivance may be used. 3. In this construction only a table top is required; on any ordinary table are placed “two or more cross pieces, flat on their upper surface, but so formed underneath that the said pieces let the supporting table into a cavity formed to its exact size; on each side of this cavity are stops (which may be made moveable to suit the size of other tables, or fixed, serving to hold or secure the supporting table between the cavities); these stops are furnished with screws, padded at their ends, which press the stops and framing of the supporting table simultaneously.” The slabs forming the folding top are made “with three or more thicknesses of wood, with the grain of each crossing or partially crossing the other, and glued or otherwise made to adhere to each other.”

[Printed, 18d. Drawing.]

A.D. 1858, April 21.—N° 872.

SHRIMPTON, ALFRED.—(*Provisional protection only.*)—“An improvement or improvements in the manufacture of metallic bedsteads, and other articles for sitting, lying, or reclining upon.” This invention is intended to facilitate the uniting and disuniting of rails and laths when the union is formed by studs and slots. A bar carrying the studs slides from back to front on each rail; when the laths are attached the bar is forced back by two or more spring or screw stretchers, whose ends may be wedge-shaped. Or the bar may be underneath the rails, the studs having longer shanks and projecting through the rails through holes cut therein.” Or slots may be cut in the rails “sloping from the inner to the outer edge;” the bar with the studs thereon, being forced “lengthways over or under such rails,” pushes the studs towards the outer edge. Or the bar may move lengthways upon or under the rails; it is then held tight by a wedge which is fastened by a bolt or screw. Or the ends of the bar (under the rails) may be provided with pieces of iron cut in an angular form, and corresponding flanges may be cast on the dovetail, “which upon being driven home into the socket presses against such projecting piece.” Or the flanges may be attached to the socket pieces.

[Printed, 4d. No Drawings.]

A.D. 1858, April 21.—N° 873.

ROSS, MARIA.—“Improvements in the manufacture of frames for looking-glasses, pictures, and other representations.” The frames are made of glass, porcelain, or earthenware, “cast or formed in one piece in suitable moulds, there being grooves, recesses, or cavities adapted to receive the picture or glass.” Larger frames are made in several pieces united by cement or connections; or there may be a foundation of wood or other material upon which the glass or porcelain is cemented or otherwise fastened.

[Printed, 4d. No Drawings.]

A.D. 1858, April 27.—N° 927.

SIMONS, EDWARD.—(*Provisional protection only.*)—“Improvements in cornices and cornice poles for window and other curtains.” At one end of the cornice or cornice pole is a drum turning on an axis and having inside a coiled spring and on its outside a ratchet wheel; a loose pulley turns on the same axis. A cord, wound several times round the drum, passes over the pulley and along the pole or behind the cornice to the other end; here is another pulley over which it passes, and returning over the first pulley hangs down by the side of the window. The first ring of each curtain is fastened “to those portions of the horizontal cord which move towards the middle of the cornice.” A pawl, engaging in the ratchet, “prevents the return motion of the cord and curtain.” To open the curtains the cord must be moved so as to bear against the tail of the pawl and raise it from the ratchet. The mechanism may be placed at one or both ends of the cornice or cornice pole.

[Printed, 4d. No Drawings.]

A.D. 1858, April 30.—N° 966.

FAUCON, JULES CESAR.—(*Provisional protection only.*)—“Improvements in bedsteads, bed bottoms, seats, and articles for lying and reclining on.” The surface on which the mattress, cushion, &c. is to be placed is a trellis or framework “resting on springs formed of a strip or band of steel curved into a peculiar stirrup-like shape, connected at their lower ends to the frame of the bedstead (or seat), in such manner that they may be removed or folded down when not in use,” and attached at top

to the trellis by slots and pins. The ends of the trellis are joined to the head and foot pieces by straps and buckles or by hooks. The head and foot pieces are capable of folding down; the feet are so jointed that they may be folded underneath. Or "the trellis may rest on rods terminating in hooks connected by horizontal springs, or elastic rings to hooks fixed to the frame, and having other hooks at top catching into eyes or rings under the trellis." Or vertical springs may be used, held in place by means of "a catch piece fitting over the cross frame rails, and having two arms curved like the segments of a screw into notches in which the bottom of the spring takes, while the top is held in a collar fixed under the trellis." The lower ends of the springs in these arrangements "may be attached to an independent frame, so as to form, with the trellis-work at top, and its end pieces, a spring bed bottom, or elastic mattress or cushion."

[Printed, 4d. No Drawings.]

A.D. 1858, May 11.—N° 1054.

PARE, WILLIAM.—"Improvements in metallic and other bedsteads, and other articles of furniture." Dovetail sockets for receiving the ends of the rails are cast or moulded in one piece with the pillars and legs. Or only the pillars and sockets, or only the legs and sockets may be cast together. Metal, glass, earthenware, or any other suitable material may be used. Or "the entire head or the entire foot" may be cast at once. The ornamental work between the pillars "may be of wrought metal, or partly of wrought and partly of cast metal."

[Printed, 6d. Drawing.]

A.D. 1858, May 14.—N° 1091.

PÊTRE, LOUIS.—(*Provisional protection only.*)—"Improvements in the application of glass to ornamental & useful purposes." The ornament or design having been prepared on one side of the glass so as to be visible through, a coat of paint is applied thereto; when this is dry, a coating of copal or other suitable varnish is added which is besprinkled by means of a sieve with sand or similar material. The whole is allowed to dry, and then "a substance of cement" is laid "over the entire surface, to which it adheres and becomes as one solid piece with the glass,"

the thickness of the cement being regulated by the intended purpose and required strength. "Surfaces so prepared are applicable for mantel-pieces, tables, and a variety of other purposes." In this way thin sheets of glass may be silvered and used as looking glasses.

[Printed, 4d. No Drawings.]

A.D. 1858, May 22.—N° 1147.

JOHNSON, JOHN HENRY. — (*A communication from Jules Antoine Pelosse.*)—"Improvements in curtain rods." The curtain rod has spiral grooves formed on it and rotates "by means of a barrel or barrels having cords wound round them in opposite directions;" other arrangements may be adopted for imparting the rotatory motion. Each curtain ring is contained in a separate groove. For a single curtain one set of spirals is sufficient; for double curtains "the two halves of the rod must have their spirals made in opposite directions." In either case the spirals "are made of a finer pitch" at the end of the rod "so as to gather the curtains into close folds."

[Printed, 6d. Drawing.]

A.D. 1858, June 1.—N° 1229. (* *)

VASSEROT, CHARLES FRÉDÉRIC. — (*A communication from Antoine Gaud.*)—(*Provisional protection only.*)—"A kind of tramway to facilitate the locomotion of bedsteads."

To effect this, under the castors a sheet-iron band of suitable width is fixed, having a small projecting flange on each side. The two rails are nailed or screwed to the floor. By means of this arrangement the bedstead can be moved by the slightest force.

[Printed, 4d. No Drawings.]

A.D. 1858, June 3.—N° 1245.

OWEN, ROBERT.—"Improvements in waterclosets, night commodes, or similar conveniences, and also in disinfecting processes." The patentee describes, 1, a night commode furnished with his "sanitary disinfecting arrangements:"—It comprises a case, lid, seat, back tank for the solids, front tank or urinal with a tap connected to it, "two powder boxes with double perforated bottoms," and mechanism. The action takes place

by opening or shutting the lid, and the boxes are together when the lid is shut but apart when the lid is open. The boxes "are guided at one end by a rib or guide," and at the other "by a rod or wire running through a groove in one end of each box." The ends of the lower perforated bottom "are made to project and are formed with cams or inclines" acted upon by pins "pointing downwards from frames" which are fixed between the supports of the seat, "so that, when the inclines come in contact with the pins as the boxes traverse to and fro, the perforated bottom is opened and closed." The lid turns on two pivots; to each is connected a lever with a head so shaped that, when the lid is raised, the levers "shall only be raised to the under side of the seat." The mechanism connected to the levers consists of an endless band, guide pulleys, a slotted piece of wood or metal, and an arm (within the slot) on which is fixed a shaft carrying other arms "connected at their tops to the powder boxes." When the lid is closed the boxes return "under the seat and over the tanks, the perforated bottom opening at the same instant so as to allow the powder to fall upon the excrements." 2, a commode having "a single powder box with a double bottom:"—The lower bottom is kept closed "by means of springs acting upon one side of the box, or by india-rubber springs working in slots running through each end of the box; the lower bottom covers the perforations of the higher one, and when moved from over the tanks by lifting the lid, the springs relax and allow the bottoms to cross each other, the powder falling through the perforations during the act of crossing," and when the lid is lowered the lower bottom is pressed against a cross bar, thereby causing "a recrossing of the perforated bottoms which again drop powder over the tanks and their contents." Sometimes a side tank is secured "to the bottom of the outside case;" it serves as "an overflow vessel where the urine can be treated a second time with powder." The disinfected urine is taken out "by an extractor which fits inside by means of an india-rubber band or other suitable material lapped round the outside of the extractor near the bottom, and secured in its position by a groove sunk near the bottom." The extractor is "a round vessel of a similar shape to the overflow tank, and is furnished with a cross handle and one or more pipes passing through the bottom up the inside to within a short distance of the top." To place the single powder box under the seat and

to remove it to the side the levers connected to the lid "are attached to bands, chains, or cords passing over guide pulleys and fixed to tightening pins or rollers at each end of the powder box." 3. "A night commode enclosed in a closet or chamber, the machinery being acted upon by the opening or shutting of a door:"—The powder box "rests on one side of the aperture in the seat when the door is shut, and on opening the door it is drawn across the aperture in the seat to the other side, and just in crossing under the aperture the lower perforated bottom is acted on by means of cams or inclines, so as to produce a crossing of the perforations and deposit powder over the tanks." When the door shuts a reverse motion takes place and powder is again deposited." The reverse motion is performed "by a weight or spring placed on the reverse side, which weight rises on opening the door, and in falling shuts it." Or this action "may be performed by the opening and shutting of a door from the inside." Instead of a box a cylinder partly perforated may be used, revolving "on a horizontal rack at each end." The commode may be placed in a recess in bed steps or other pieces of furniture. The Specification describes also an apparatus for "disinfecting impure waterclosets and common privies; a mode of treating public urinals with the disinfecting powder;" a plan "for applying a liquid agent or the disinfecting powder in solution;" a hand powder box; and a method of drying the "disinfected manure."

[Printed, 1s. Drawing.]

A.D. 1858, June 4.—N° 1263.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in preparing the fibrous portions of certain textile plants, and the employment thereof when prepared, either alone or in combination, with articles already in use, for the purposes of stuffing." The fibrous portions are those of "the musa, the aloe, the agave, the corchorus fuscus, the corchorus junceus, the corchorus olitorius, the corchorus capsularis, and the palm leaf." The fibres are cut into lengths of from about twelve to eighteen inches, carded, purified and bleached, washed, dried, and carded again in a finer machine, or curled. The bleaching bath is "a chlorine bath of the strength of 3° to 4° Beaumé, with a small addition of

“muriatic acid.” The water in which the fibres are to be washed is to be “saturated with a few drops of sulphuric acid.”

[Printed, 4d. No Drawings.]

A.D. 1858, June 5.—N° 1269.

COOKE, EDWARD, and DICKINSON, GEORGE.—“Improvements in the manufacture of metallic and other bedsteads, and other articles for sitting, lying, and reclining upon.” Each lath is composed of two strips of metal, the upper being supported on the lower by a spring at each end. Between the strips are springs, by preference “having the form of double bows.” The lower strip is sometimes dispensed with; the end springs are retained, and the lath is supported by a spring “somewhat resembling a coach spring.” This spring is fixed on a bar “running along the middle of the bed frame;” its ends pass through staples on the lath and are covered with leather to prevent noise. Webbing “crossing the said laths” is employed for sacking; each piece is fastened to a rail at one end and to a roller at the other; on the roller is a ratchet wheel with a pawl for regulating and preserving the tension. Tubular ornaments for metallic bedsteads, &c., are cast “flat or nearly flat, and in one piece;” they are bent into a tubular form, and the edges are soldered or brazed together.

[Printed, 10d. Drawing.]

A.D. 1858, June 14.—N° 1340.

CLARK, WILLIAM.—(*A communication from Alphonse Lous-tauman.*)—(*Provisional protection only.*)—“Improvements in curtain poles or rods.” The curtain pole “is spirally grooved,” and “receives rotary motion on its axis by means of the friction of a cord placed on a small wheel mounted on one extremity of the pole.” The curtain rings “take into this spiral groove.” For a single curtain the groove is made in one direction only; for a double curtain the pole must be grooved in different directions from the middle to the ends.

[Printed, 4d. No Drawings.]

A.D. 1858, June 22.—N° 1409.

RAINÉ, JULES ADOLPHE.—“Improvements in collapsible frame-work for bedsteads, sofas, & other like articles of furniture.”

The frame is "distended or collapsed" by means of a series of cross levers or lazytongs on each side. One end of one cross lever is jointed to each post; one end of its fellow lever is moveable and attached by a thumbscrew which enters any one of several holes in the post; or the moveable end may be notched and locked into a forked or notched piece fixed to the post. The cross levers are kept stretched from each other by stays which form at the same time their joint pins; or stays "may extend between some of the upper and lower joints." One of the levers on each side is made "with a prolongation" which serves as a leg. The side rails are laid on the upper ends of the levers or on angle pieces "jointed to the upper ends;" they are hinged at mid-length, distended by a stretcher at this point, and connected at each end by a tie bar. The posts are kept in place by stretchers. A couch or chair is convertible into a bedstead by jointing a padded frame at each end to the legs or uprights at the extremities of the levers, one of which is moveable and adjusted as before described. Straps and buckles are used instead of longitudinal laths, and the ends of the cross laths are secured on the upper joints of the levers. The padded frames are adjusted by means of pierced semicircular plates and bolts or pins.

[Printed, 10d. Drawing.]

A.D. 1858, July 5.—N^o 1506.

SIMONS, EDWARD.—"Improvements in castors for furniture." This invention relates principally to ball castors; these are made in various ways, each susceptible of modifications. 1. The ball, of metal or other hard substance, is supported in a hemispherical cup and is prevented from falling out by a ring which screws into the mouth of the cup, or by the mouth being turned inwards. A small roller of concave figure is placed in the neck at the top of the cup, its axis being fixed across the neck. Sometimes the roller has "a length exceeding one half of the diameter of the ball," the curve being "of the same radius as that of the ball;" sometimes the roller is of convex shape. In castors of this sort the socket may be made in one piece with the cup, or it "may turn upon the neck of the said cup." 2. The ball is mounted upon a horizontal axis, on each end of which is a small roller; the ends of the axis and the rollers engage in an annular groove formed by the edge of the cup and the ring or by the turned

in edge of the cup. Instead of employing a socket the cup may be carried by a horizontal arm which is attached to the leg of the furniture in such manner that the cup has motion upon an axis in the arm, and the arm has motion round an axis upon the leg.

3. Instead of enclosing the ball in a cup, a dome is sometimes used and fixed to the bottom of the socket by a pin; on the under side of the dome is an annular channel "between the edge and centre;" the ball is held in the channel by the turned in edge of the dome or otherwise; it can revolve freely round the axis of the dome and is also capable of rotation on its own axis. The socket may be dispensed with by attaching the dome to the leg of the furniture "by means of a screw in place of the axis," which takes into a plate fixed on the bottom of the leg. Sometimes only "a quarter or other portion of a dome turning on an axis" is employed. Sometimes a wheel or roller is substituted for the ball; it has drilled through it a hole through which passes a curved axis "fixed at its ends to the ends of the portion of a dome."

[Printed, &c. Drawing.]

A.D. 1858, July 6.—N^o 1516.

NEWTON, WILLIAM EDWARD.—(*A communication*).—"Improvements applicable to roller blinds." The improvements admit "of dispensing with the lower bracket for straining the cord," and allow the cord "to hang loosely, or with only a tassel suspended to it for ornament or to keep it straight." The roller, "which should be perfectly cylindrical," is not mounted upon pins or centres; it is "simply to be cut to the right length," and the ends are "received in curved or semicircular sockets, which are screwed or otherwise fastened to the window frame." On the right end of the roller is fixed a grooved pulley, "the periphery of which is covered with an india-rubber band;" the groove is either flat or V-shaped; in the former case "a flat woven or other endless band," in the latter a round cord is passed round the pulley and hangs down through an opening made "at the lower side of the socket." Below the band or cord "passes through a ring provided with a tassel;" it is made "to bind on the india-rubber covered surface of the grooved pulley," and, therefore, the roller "may be rotated in either direction by pulling the corresponding end of the band." The roller is kept down

in the socket at the other end, and the blind is kept suspended at any required point by means of a metal spring, "which is made to press on its periphery;" a piece of solid vulcanized india-rubber may be used in place of the spring, the roller being confined in the socket by means of a forked metal piece. The sockets or brackets are secured to the window frame in the most convenient manner, either vertically or horizontally, or "to a cross piece above."

[Printed, 8d. Drawing.]

A.D. 1858, July 7.—N^o 1523.

HOLLAND, JOHN, and POTTS, FERDINAND. — "Improvements in ornamenting metallic bedsteads, and which said improvements are also applicable to the ornamenting other metallic surfaces." The first part of this invention consists in "pre-serving the bright surface of the article intended to be ornamented, so as to make it conduce to the same effect that would be produced if gold or silver leaf had been used." The article supposed to be ornamented is a bedstead pillar made of or coated with brass. The surface being prepared "by dipping in suitable acid," and by polishing and burnishing "if brightness of effect is desired," a coating of paint is laid thereon, "using such vehicles in the mixture as will readily harden by the process of stoving." On the painted surface "after drying, but before hardening or stoving," the intended design is formed by painting or by transferring a printed ornament, "using for this purpose either for the pencilling or printing any suitable pigment, such as ground lamp black mixed with nut oil." After some time the pigment is washed off, "bringing with it the painted ground on which it had been placed, thus leaving the design beautifully and keenly defined." The pillar may be further finished "according to the taste or capacity of the artist employed," after which it is covered with a coat of varnish and stoved in a japanner's stove, "preferring rather to use an excess of heat," say from 120° to 150°. It will be evident "that this mode is capable of some diversification," and the patentees describe one. The second part relates to "the mode of imitating enamel or vitreous surfaces." The surface is coated with Venetian red or other suitable colour "mixed with any suitable varnish or other vehicle that will dry dead," and after drying the process is repeated until the

surface is smooth and level. The colour which the surface is to assume when finished is prepared by grinding in pure water, sieving until perfectly fine and free from grit, exposing to the air until all moisture is evaporated, and then mixing "with equal proportions of mastic and copal varnish." A "good body" of this is laid on the pillar, and when this is dry "a second, " third, or fourth coat," using with each succeeding coat less of the coloring matter and more of the varnish, and between each coat placing the pillar in a stove for drying and hardening. Any design may be added to this surface, "protecting the same by a " coat or coats of pure varnish," and finishing by stoving.

[Printed, 6d. No Drawings.]

A.D. 1858, July 13.—N° 1572.

EDWARDS, JOHN, and NEWAY, THOMAS.—"Improvements " in the manufacture of blind furniture." This invention relates to an improved method, first, "of fastening the tassel cord to " blinds," and secondly, "of preventing the slipping of the " drawing cord of Venetian blinds." A hollow acorn or other suitable design, made of wood, bone, or any other material, "is " made to unfasten in the middle by means of a screw or other " method;" into the cup end is fixed a screw or other contrivance, whereby to attach it to the lath of the blind; a hole is drilled through the other end to allow the tassel cord to be passed in from the outside. An escutcheon is made "with a shank in the " inside;" to this shank the drawing cord of a Venetian blind "is fixed and then drawn into its place, and the knot is thereby " hid from view, and an ornamental finish given to the blind."

[Printed, 4d. No Drawings.]

A.D. 1858, July 27.—N° 1691.

EMES, JOHN.—"A portable folding bedstead," capable of dividing into two parts, each forming a couch or chair. The bedstead "consists of two symmetrical portions" joined by a forked rod. Each half "is composed so as to fold into four pieces, viz., the head and the three parts of which the bottom is formed;" the several parts turn on hinges or joints. "A springing band " or bolt on each side holds each portion rigid when in the horizontal position, and acts as a tie-bar when the said portion is "vertical." A trunk is attached to one or each half.

[Printed, 6d. Drawing.]

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A.D. 1858, July 30.—N° 1720.

REYNOLDS, GEORGE WAIDE.—(*Provisional protection only.*)
—“A new or improved cradle,” supported and turning upon a horizontal axis. A spring, which is wound up by a key, is connected with the axis by means of “a train of wheels and an escapement.” The motive power “may be applied at a point above or below the axis.”

[Printed, 4d. No Drawings.]

A.D. 1858, August 2.—N° 1753.

BILLING, MARTIN.—(*Provisional protection only.*)—“Improvements in metallic bedsteads and cots.” This invention “consists in the mode of simplifying the construction and arrangement of those parts which form the head, foot, and side rails.” A tubular form of metallic frame is employed, having a longitudinal slot corresponding in width to the thickness of the panelling to be inserted, so that “by twisting or corrugating” the edges of the panelling, it may be securely held “through the medium of the raised edges and slot.”

[Printed, 4d. No Drawings.]

A.D. 1858, August 16.—N° 1865.

GEYELIN, GEORGE KENNEDY.—(*Provisional protection only.*)
—“Folding bedsteads, and which I call the universal and folding joint for bedsteads.” To the posts plates are fixed, “provided with one or more holes, which serve as centres, from either of which the head and foot rails may be folded on the frame; through these centre holes set screws or bolts are screwed into the frame, by which means a bedstead can either be folded or taken to pieces like an ordinary bedstead.”

[Printed, 4d. No Drawings.]

A.D. 1858, August 27.—N° 1939.

ELLISDON, JOSEPH.—“Improvements applicable to reading chairs and other articles used to sit or recline upon.” The patentee applies reading or writing desks, or both, to chairs and couches in such a manner that they can be folded up and stowed away out of sight when not in use. The desk, jointed in the

middle, is attached by a groove joint to a horizontal support; this is fixed to a vertical spindle which slides in and out of an arm supporter, or a front leg, or both, or the frame in the rear of the leg. The end of the desk, "which is in union with the "vertical spindle, is constructed to form a head or cap to the "front leg or arm supporter." When the desk is folded up and lowered, it is turned round and taken into a recess "beneath the "pad of the chair arm." The spindle may be provided with a set screw, or spring, or both; but the patentee prefers to line the hole through which it works with elastic or semi-elastic material. A sounce may be fitted to the desk.

[Printed, 6d. Drawing.]

A.D. 1858, August 28.—No 1951.

WHITE, GEORGE.—(*A communication from Mr. Von Mannstein.*)—"Ambulatory furniture for apartments." The various articles described can be "easily taken to pieces, flapped, and slid together" for packing. In tables the legs are joined to the frame by "oblique pegs," and the whole is kept together "through "tension" by driving into the middle a piece which acts as a wedge. A library or writing table is constructed on the same system. Various parts are fastened together with pegs, and "an "ornamented ledge" is pressed between "to produce firmness." A table frame, composed of skeleton bars, is so constructed that it "may be turned into a strong packing chest." The tops of other tables form the sides, bottom, and shelves for holding the legs of the other tables. Wardrobes "are furnished with double "sides, turning on hinges, for allowing them to be folded up "over the door, so that the crest and foot being taken off the "entire forms a packing chest." In chairs the different portions are fitted to each other by pegs or "attractive and expanding "screws," or both. The stretchers are bars or screw rods, and in arm chairs the middle portion of the arms also. Cushions for chairs and sofas are made hollow:—Steel bands are screwed to a frame, and have a straight steel band riveted to the top of them. In the "back cushion" the spring bands are screwed to the top, and at bottom to a bar which "can be pushed up and down." The force of the springs is regulated by means of girths and buckles. In "cushions applied to a bed," between every steel band a girth is tentered and fastened thereto. The sides of the

frame of a compressible spring mattress consist of lattice work fastened by rods. The bottom is made of boards so attached to the lattice work as to move with it. A bed frame is composed "of two equal boxes or frames," hinged so as to form a trunk. There are in the corners holes through which the rods fixed to the feet are put. The middle feet have each at top two pegs which enter holes in the boxes, thereby firmly joining them. On the rods are crests bored for the reception of rods which carry jointed curtain rods. Two bedsteads are described, each of which folds up as a trunk or chest; in one, when opened, part of the middle can be taken out, turned, and set up on the frame as a table; in the other is a bed with lattice work, as before described. An arrangement is detailed of a child's bed made of lattice work, which when drawn out "forms a complete bedstead for grown-up persons." The patentee employs the lattice work system also in the construction of cars, roofs, and tents. Details and drawings are given "of the various parts of the invention, and indicate "the manner in which the same is put into practical effect."

[Printed, 1s. 4d. Drawings.]

A.D. 1858, August 30.—N^o 1960.

DAVIES, GEORGE. — (*A communication.*) — "Improvements in "billiard tables and cues." The frame of the table is "annular," and supported on three or more legs. On the frame are three or more rollers mounted on supports "which slide in T grooves." The table of slate enclosed in a wooden frame rests on the rollers and is set true and level by means of set screws by which "the "rollers may be raised or lowered." A spirit level is let into this frame; or the levelling may be effected by screws attached to the feet. To the middle of the table is fixed a plate carrying a pin "which is capable of revolving and also moving vertically" in a hole pierced in a transverse piece fastened on the annular frame. The cloth is stretched by an inner frame to which elastic cushions are attached. A cover "having one side covered with a cloth, so "as to form a card table, and the other with mahogany for "ordinary purposes" fits over the outer frame. In or under the annular frame are drawers. The cue is composed of two tubes, the lower one, containing a spring, is screwed on to the upper one; inside this slides a rod carrying the tip. On the upper tube

is fixed a spring catch, terminating at one end in a hook which takes into notches formed on the surface of the rod.

[Printed, 8d. Drawing.]

A.D. 1858, August 31.—N° 1974.

AYCKBOURN, FREDERICK.—(*Provisional protection only.*)—
“Improvements in the construction of beds and other articles for sitting or reclining upon.” The case of the bed, pillow, or cushion is divided “into numerous independent cells, each closed at one end and open at the other, having one long flap which covers all the orifices, and is to be buttoned or otherwise firmly secured underneath.” In each cell is placed a bag made of india-rubber, cloth, or other material capable of holding water or air and furnished with a mouthpiece. The capacity of the bag exceeds that of the cell “by about one-fifth, which arrangement prevents the possibility of the bag bursting.”

[Printed, 4d. No Drawings.]

A.D. 1858, September 9.—N° 2039. (* *)

LUIS, JOZÉ.—(*A communication.*)—(*Provisional protection only.*)—
“An improved life preserver raft or buoyant mattress.” This invention is specially intended for application to waterproof duck-cotton mattresses, which are stuffed with cork shavings, such mattresses being very comfortable as a bed, and also very buoyant when in water. The improvement consists in providing such mattresses with straps and buckles on their upper and under surfaces, and with loops round their edges. By this arrangement, in cases of emergency, a series of mattresses can be buckled together; and a life preserving raft may be formed by placing several layers or tiers of the mattresses buckled together on the top of one another, in such a manner as to form angular break joints, the said layers or tiers being so buckled and strapped together that it will be impossible for the tiers to separate or change their position, either longitudinally or laterally.

[Printed, 4d. No Drawings.]

A.D. 1858, October 8.—N° 2240.

NICHOLLS, ALFRED, and WALKER, THOMAS.—“An improved spring hook, catch, or fastening,” to be employed in

fastening wearing apparel and "in hanging curtains or other "furnitures." This hook is made "of plate metal stamped or "cut to the required form in a flat blank," which is afterwards "turned or shaped so that one end shall overlap the other or "spring, and thereby form an endless link or hook which cannot "become unfastened by accident, but requires the spring to be "depressed into an inclined plane to allow the eye to be un-"hooked." It is secured to any article by its back portion, and the eye used in combination with it is of the ordinary construction. "It may also be made in other manners, such as of wire "bent and arranged into the required form."

[Printed, *6d.* Drawing.]

A.D. 1858, November 5.—N^o 2472.

SMITH, THOMAS BRIGGS.—"Preparing wood so as to be used as "a substitute for curled hair in the manufacture of mattresses, and "in the other purposes to which curled hair and its substitutes "are applied." Pieces of hickory, poplar, cedar, or other suitable wood are cut into thin elastic shavings; these by the same operation are divided longitudinally, "so as to form compound shavings "or conical wood springs, consisting of numerous thread-like "fibres compactly and spirally coiled one within another." They are then subjected to the action of steam in a suitable chamber for a few moments, when they become expanded, soft, and elastic, and ready for use.

[Printed, *6d.* Drawing.]

A.D. 1858, November 9.—N^o 2508.

FELIX, JOSEPH.—"Improvements in castors for furniture and "other similar purposes." The socket of this castor is "an "inverted cup;" it receives within it a ball of iron, caoutchouc, wood, or other hard material. The upper part of the ball bears against a number of small balls, which rest upon the under side of a disc "hollowed to correspond with the surface of the ball," so that the small balls "bear both on the one and on the other." The disc is suspended from the cup by a rod, and there is sufficient space left between them for the small balls to pass; there is also left between the edge of the disc and the sides of the cup a passage of sufficient size to allow the balls to pass between them, *so that when the large ball turns it causes the small balls also to*

turn, "and so forces them from the space below the disc to the "space above," whilst those that were in the space above descend into the space below.

[Printed, 8d. Drawing.]

A.D. 1858, November 13.—N° 2551.

PÊTRE, LOUIS.—"Improvements in the application of glass to "ornamental and useful purposes." This invention will be found described in all its essential points in Abridgment N° 1091, dated 14th May, 1858. In the present Specification the patentee states, that he lays "a coat or coats of paint" on the ornament or design; that "paint, glue, siccativ oil, or other suitable adhesive matter" may be substituted for the copal or other varnish; and that, when the whole is dry, he applies "a slate, stone, or other suitable substance coated with cement in its soft and plastic state;" and, if the slate or other substance is thin, he adds thereto "a thickness of cement or other material, according to the purpose intended and the strength required."

[Printed, 4d. No Drawings.]

A.D. 1858, December 1.—N° 2737.

LOACH, JOHN, and COX, JOHN.—(*Provisional protection only.*)—"Improvements in ornamenting the surfaces of japanned goods, "and which said improvements are also applicable to the ornamenting of certain other surfaces." Ornaments are formed from pieces or scraps of perforated zinc or other metal "placed together so as to form the ornament desired, whether on a "round, curved, or flat surface;" over this surface there is to be laid on (in a sufficient number of coats) "black japan or other "coloured paint of sufficient thickness as to completely imbed "such metal ornament." After the usual process of drying or stoving "the whole must be rubbed down and polished with "pumice and rotten stone." Certain portions of the metal ornament are afterwards painted "with various transparent colours;" this gives "the appearance of tinsel work, to be further ornamented by pencilling on gold or other tracery scrolls or other "ornaments." The whole is to be protected by varnish "and "handed up in the usual way." Such ornaments may be pressed into the fronts of drawer and other hard wood knobs and such like articles, "provided such ornaments are applied on the end way

" of the woodwork." This invention is applicable to an "endless variety of articles," amongst which are named tops and other parts of japan tables, pillars of metallic bedsteads, and fronts of japan and hard wood knobs.

[Printed, 4d. No Drawings.]

A.D. 1858, December 4.—N° 2780.

TURNER, JOSIAH.—(*Provisional protection only.*)—"Improvements in the construction of chairs." The chair frame is made in two portions, the seat and front legs forming one, the back and hind legs the other. A screw nut is let into each of the side rails and into the opposite parts of the back; the nuts are drawn together by screw bolts which work in recesses in the rails, and "have holes formed in their stems by which an instrument can be introduced to turn them." Or metal studs or buttons may be fixed on one portion and plates on the other, having holes of such shape as to admit the studs and permit the stem "to drop into a notch formed for it on one side of the hole, so as to carry the button partially behind the plate, and thus to fix it." Sometimes the front legs are separate from the seat and attached to it by nuts and screw bolts.

[Printed, 4d. No Drawings.]

A.D. 1858, December 9.—N° 2827.

ALLEN, THOMAS.—"Improvements in folding bedsteads." The side rails are tubular (but solid metal may be employed) and made to fold by means of one or more rule joints, which may be secured by hooks when the bedstead is open. On the under side of each side rail are two projections which enter the sockets of the cross legs; the projections are by preference T-shaped; the two sides "enter the ends of tubes forming portions of the side rails," and are secured there by pins. Or the rails may be formed with sockets for projections on the legs to enter. The lower ends of the head frame are let into holes in the rails. The sacking is sewn on.

[Printed, 6d. Drawing.]

A.D. 1858, December 13.—N° 2852.

YON, LOUIS CHARLES VICTOR.—(*Provisional protection only.*)—"Improved elastic beds," which can be "folded up either in

"length or in breadth." Spring mattresses are divided into parts which are tied together with gutta percha bands. To give the mattresses "the shape intended, and enable them to retain it," the patentee makes use of "hinge springs," and maintains "the opening in breadth by means of rattans." The invention is also applicable to bolsters and pillows.

[Printed, 4d. No Drawings.]

A.D. 1858, December 22.—N^o 2927.

GREEN, EDWARD.—(*Provisional protection only.*)—"Improvements in tables." This invention "consists in forming tables with a central revolving disc," or with two or more discs, each having a separate motion, to enable them to move in the same or in a reverse direction." The tables are fitted with suitable gear, that "the discs, or one or more of them, may be rotated by turning a handle or treadle."

[Printed, 4d. No Drawings.]

A.D. 1858, December 28.—N^o 2968.

LYONS, ABRAHAM.—(*Provisional protection only.*)—"Improvements in travelling bags," whereby "additional room may be obtained and the bags rendered available as serviceable cushions for the seats of railway or other conveyances." Two bags are united side by side "through the medium of a double frame mouth," which is formed of "three parallel bars secured at the ends by link or spring movements." By this contrivance one of the bags can be "turned up and placed at right angles with the other," forming thereby "a cushion to the seat and back of the conveyance." The double frame mouth is provided with handles for carrying the bags and with "a two-way key hole lock."

[Printed, 4d. No Drawings.]

A.D. 1858, December 31.—N^o 3005.

CASPER, FREDERIC WILHELM ALEXANDRE, and SCHMAHL, GUILLAUME HENRY.—"Using spart or Spanish broom in manufacturing seats of all descriptions," especially such as are used in "exposed places." The frame is made of any wood; the various portions of the frame are "tied together with strips of split rattan, which are closely twisted round so as to hide the

"wood entirely." The external face "of the seating frame is formed of interwoven strips of rattan." The back "is composed of one or several compartments," to which "light ornamental braided spart ribbons may be attached so as to form various kinds of fancy figures."

[Printed, 4d. No Drawings.]

1859.

A.D. 1859, January 8.—N^o 69.

FORSTER, JOHN THOMAS.—"Improvements in bed berths applicable for bunks, hammocks, cots, & other fixed & moveable sleeping places." The ends of the berths are two pieces of wood curve-shaped at bottom; in one piece are holes for hanging it on hooks; in the other are holes and laniards for lashing it to the opposite fixtures, and keeping it distended." A piece of canvas (or two pieces sewn together) is nailed round the edges of the wood, "carrying the extremes of the canvass round the corners, so as to turn inwards, and overlap the sides." Or the end pieces (which may be iron) are drilled with holes, and the canvas is provided with eyelets for lacing together. A narrow piece of canvas, stretched from side to side, serves as a pillow. Side stretchers may be inserted if required. To construct a double berth each end piece is formed "with a rise in the middle," and a rope is strained in the middle of the canvas between the end pieces, so that there is a tendency to form a "separation in the middle."

[Printed, 6d. Drawing.]

A.D. 1859, January 13.—N^o 109.

SCOPES, GEORGE.—(*Provisional protection only*).—"Improvements in apparatus for communicating motion to cots, cradles, & other articles for children's use." The apparatus, consisting of "a spring and train of wheels," imparts motion "by means of an escape wheel fixed on the train gearing with pallets mounted on the axes of motion of the cot, &c." Or "an excentric or crank may be attached to a spindle of the

"train, which by means of a connecting rod will communicate motion."

[Printed, 4d. No Drawings.]

A.D. 1859, August 18.—N° 147.

NEWMAN, WILLIAM.—"New or improved furniture for window and other blinds." The end of the roller, where the mechanism is applied, works in a bearing made in a lever which is "fixed in a nearly upright position upon the bracket." When the roller is stationary, the upper end of the lever rests against a shoulder on the bracket. On the axle of the roller is a ratchet wheel, and on the bracket, above the lever, a pawl. The blind cord is wound round a pulley on the roller, and ascending passes round a pulley fixed over the other, and thence hangs vertically down. When the cord is first pulled, the lever is raised, and its upper side, engaging under a shoulder on the pawl, lifts it from the teeth of the ratchet. The other end of the roller is mounted as in ordinary blind furniture.

[Printed, 6d. Drawing.]

A.D. 1859, February 2.—N° 303.

CLEMENTS, ISAAC.—"A new or improved method of manufacturing curtain rings." The rings are cut from sheet brass or other suitable metal or alloy. They are then subjected to the action of a pair of dies so as to round the edges and "give them a circular or nearly circular figure in cross section." The rough edge or burr is removed by burnishing or otherwise.

[Printed, 6d. Drawing.]

A.D. 1859, February 5.—N° 334.

ANDERSON, HENRY.—(*Provisional protection only*).—"An improved construction of apparatus for winding window blinds, sun shades, and similar articles on their rollers." The apparatus consists of a framing through which two journals are passed, "the end of one being fastened to the blind roller." To this journal is affixed by a stud or its equivalent a coiled spring; on the same "is also a toothed wheel gearing with a small pinion on the other journal." On this latter, "alongside the pinion,

" is a ratchet wheel; on it the end of the lever, to which is attached the cord, is made to rest by a vee-shaped spring."

[Printed, 4d. No Drawings.]

A.D. 1859, February 9.—N° 364.

JEFFERIES, HUMPHREY.—(*Provisional protection only.*)—" An improvement in castors." Within a socket " a cup of glass, earthenware, or steel is fitted in an inverted position; into this cup a sphere of wood or other material is placed and is secured in its position by a ring screwed or otherwise fixed over it." When the castor is in use, " the sphere rests on the surface supporting the piece of furniture," and " when the piece of furniture is moved, the sphere turns and allows it to run freely."

[Printed, 4d. No Drawings.]

A.D. 1859, February 18.—N° 450.

COLE, JOHN JENKINS.—(*Provisional protection only.*)—" Improvements in Venetian and other suspended blinds, and in the method of hanging and working them." A balance weight is so hung " as to counterpoise or partially counterpoise the weight of the blind to which it is attached." This weight is hung to the lines " which pass in the ordinary way over pulleys and through the laths of a Venetian blind, or through the rings, loops, or eyes of a blind of flexible material." Sometimes the weight is fixed " independently of the line or other ordinary means of suspension and working." Both ways are applicable to existing blinds " either with or without a boxing;" but, when the blind is between linings, the weight should by preference " be hung behind one of the linings by lines and pulleys conducted from the bottom part of the blind," and an additional line should be " attached to the weight and brought over a pulley." When the blind is hung " on the inner face of a wall or in such like situation," the hanging lath is to be extended, and the additional pulleys are to be placed in such extension. When it is hung " between the pulley stiles of the lower sash of a window," a horizontal pulley or pulleys should be used " to turn the new working lines in a direction inwards." In fitting a blind " in a newly formed situation," a wood frame or lining should be made for the blind with a boxing on one side of the weight. The two lines " that usually pass upwards" should be carried to the

weight, and another line should be attached to the weight and brought over a pulley, so as to draw up the weight when required. Another line should be fastened "to the middle of the bottom lath " or wire stretcher," and be carried up through the laths "over " pulleys and down one side of the blind opposite to the boxing." In some cases two weights are used; the two lines must then be carried "over the pulleys separately, attaching one line to each " weight." In some cases the line that carries the weight and the line that raises the blind are "brought over both on one side " of the frame."

[Printed, 4d. No Drawings.]

A.D. 1859, February 26.—N° 521.

HINE, JOSEPH.—"An improved joint for cabinet making, carpentry, and other constructive purposes," which is applicable to all purposes "where a rectangular or other angular joint, a " parallel flush joint, or a sliding joint is required. It may be made in wood, metal, slate, stone, or other material. To form the joint two feathers or tongues at right angles to each other are cut in one piece and two corresponding grooves in the other. It is " self-supporting and self-binding, and when put together and " glued or otherwise cemented requires no binding or other securing, as it cannot move in any direction except sliding in the " direction of the grooves and feathers." To prepare this joint the material is cut "by means of two circular saws of a similar " diameter, revolving on the same shaft, the saws being the thickness of the required grooves and divided by a washer of similar " thickness;" but "planes or cutters" may be employed.

[Printed, 8d. Drawings.]

A.D. 1859, March 5.—N° 578. (* *)

BAILES, WILLIAM, and BAILES, JAMES.—(*Provisional protection only*).—"An improved ship's berth, for prevention of sea " sickness, composed of wood" and metal. This cradle is composed of transverse and longitudinal ribs of iron or wood, all of which are concave, so as to form a hollow instead of a flat bottom. These ribs are attached to a rectangular frame, which is enclosed within an outer frame. The inner frame is supported by the outer one, by means of a pivot at the head and at the foot; and the outer frame is supported by a pivot in the middle of its length on each

side, one of which pivots enters a socket in the ship's side, and the other a socket in the top of a standard fixed to the deck. Thus, when the ship rolls, the inner frame swings on the head and foot pivots; and when it pitches, the outer frame swings on the side pivots, and carries the inner frame with it. The motion is regulated by india-rubber bands.

[Printed, 10d. Drawings.]

A.D. 1859, March 30.—N^o 796.

JEFFERIES, HUMPHREY.—(*Provisional protection only.*)—"Improvements in castors for furniture." "In making a castor," says the patentee, "of that description where a sphere is used as the roller in place of simply using glass or china, or earthenware for the interior of the castor where the sphere is received, not only is the interior so formed, but the exterior also, so that the frame or body of a castor suitable to be fitted to a piece of furniture will be made in one piece of glass, china, or earthenware, and the same will have a hollow or recess at its under side to receive the spherical roller of any suitable material, and such sphere will be retained in the hollow or recess of the frame or body of the castor by any convenient means."

[Printed, 4d. No Drawings.]

A.D. 1859, April 5.—N^o 851.

BRIERLEY, LEONARD, and GEERING, HENRY.—"A new or improved method of ornamenting metallic bedsteads and other articles of metallic furniture." The surface to be ornamented is prepared "by the application thereto of a coating of oil paint or priming." When the coating is thoroughly dry, "designs upon paper" are attached by "an adhesive composition consisting of good wheaten paste tempered with a little glue water" or any other suitable composition. When this is sufficiently dry, a coating of gum or isinglass, "by preference in the form of a hot solution," is applied to the ornamented surface, and when this is set the surface is "varnished with a quick drying varnish and dried in an ordinary japanner's stove at a moderate temperature." When the varnish is set and hardened, a coating of "fine copal varnish or other varnish which is slower in drying" is laid on; "the article is again stoved," and the sur-

face when thoroughly dry is polished "in the manner known as hand polishing."

[Printed, 4d. No Drawings.]

A.D. 1859, April 8.—N° 877.

WHEELDON, MATTHEW. — "An improvement in looking-glasses and mirrors," whereby they are rendered applicable "to all the purposes of an ordinary looking-glass" and "to all other useful, ornamental, or decorative purposes to which reflectors, looking-glasses, or mirrors have hitherto been ordinarily applied." Amongst these are "wall or door panelling for ships' and other saloons, and for insertion in chiffoniers, sideboards, tables, and other cabinet articles and furniture." The invention consists in "frothing, roughing, or obscuring, and cutting, carving, or otherwise producing an ornamental border or other design" on one side of the plate, and in afterwards "silvering the same on the side on which the pattern or design is cut or produced." The processes are effected by the ordinary methods. The plates are first roughed, frosted, or obscured; "certain parts of the design are then to be cut or carved in the glass," and to be polished or left unpolished according to taste or circumstance; the whole is afterwards to be silvered on the ornamented side; "but, if preferred for any particular purpose, the mirror or glass plate may be silvered on the plane side, leaving the design or pattern on the exterior surface."

[Printed, 4d. No Drawings.]

A.D. 1859, April 14.—N° 936. (* *)

BIRD, THOMAS. — "Improvements in the manufacture of pickers, drawing rollers, cop tubes, and steps where lubrication is required. The patentee says,—"I use the nuts known as the coquilla nut (*attalea funifera*) and the vegetable ivory nut (*phytelephas macrocarpa*), which from their oily nature require no additional lubricating matter, a very considerable item in machinery and manufacturing establishments, the same being peculiarly applicable to the following purposes:—

"For pickers for looms; by putting a bush made of the said substance in the tube, bush, or barrel of the picker, which runs

" on the spindle, whether the said tube be made of buffalo hide, wood, metal, or other material; and I make the picker of a simple T shape, the tube at the top forming the top part without any slot for the picking strap, the picking strap being fixed round the tube and the centre of the picker; the bush or barrel may also be bounded with caoutchouc, leather, buffalo hide, or other suitable substance."

"The said nuts are also applicable for drawing rollers used in spinning machinery, which will require neither covering on the outside, nor oiling on the journals.

"For small tubes on which the cops are built on the spindles.

"For pulleys, wharves, cotters, journals, barrels and rollers for castors, wharves for window or Venetian blinds, tips for skewers, steps and journals for gas or water meters, steps, journals, and bushes for time pieces, steps for looms, bearings for head shafting or other bearings for looms; in fine, for all steps, bushes, and bearings for machinery where lubrication is required, provided the same be not required larger than the said nuts can be found."

[Printed, 6d. Drawing.]

A.D. 1859, April 15.—N° 948.

CHAPMAN, JOHN.—"Improvements in the manufacture of angle iron." The object of this invention is to give to angle iron (which is much used in metallic bedsteads) "a smoother and cleaner surface" for the better reception of paint or ornamentation. The iron is passed between a set of three hard smooth moulding rolls and "a pair of planishing rolls;" it is passed backward and forward between the former "proceeding from the larger grooves to the smaller grooves." In front of each set of rolls is a pair of scrapers of such figure that, as the angle iron passes into the rolls, the inner and outer surfaces "are scraped by the said scrapers and cleaned from adhering scale." The upper scrapers slide on and can be lifted by levers; the lower or block scrapers slide on bars; the former scrape the interior, the latter the exterior surface, but this arrangement can be reversed. The upper scraper of the moulding rolls "is formed at its four angles so as to scrape angle iron of four different sizes; and either of the four corners may be brought into operation by adjusting the scraper in the required position in the claw by which it is

"carried." Over the planishing rolls is fixed a cleaner (or cleaners) of iron, steel, or other metal or wood, for the purpose of keeping the grooves clean and bright. One figure in the drawing "represents a combined scraper for scraping the exterior," another "a combined scraper which may be used for scraping the internal " and external surfaces."

[Printed, 8d. Drawing.]

A.D. 1859, April 26.—N^o 1043.

ALLMAN, HERBERT. — "Improvements in the construction " of window blind mountings, and in apparatus connected there- " with." The patentee describes "various forms of apparatus" for "governing the motion and regulating the position of " blinds." In one the outer flange of the cord pulley is cut as a ratchet, and a stop, serving as a pawl, projects from the bracket. The roller spindle, which turns in a vertical slot, rests on a lever through which the cord passes. By pulling the cord inwards the flange is lifted out of gear with the stop. The lever in this and several other arrangements may be placed either inside or outside the bracket. In another, the lever is so arranged as to act as the pawl; in this case the slot is not vertical. In another, the outer flange (the edge of which is plain in this and the following arrangements) rests between "the angle pieces" of the bracket, "which are bent at right angles" to the pulley; the spindle is lifted by the head of the lever, which is "in the form of " a cam." In another, the spindle is pressed upwards against the angle pieces by a spring; the lever, when pulled by the cord, "presses the spindle down and enables it to run freely." In another, the lever turns on centres fixed in the bracket above the pulley; when it falls it thrusts a wedge between the flanges. In another, "a left-handed screw," fixed in the upper end of the lever and screwing through a nut in the bracket, presses against the outer flange. "The weight of the lever forces the screw, but a " spring may be employed." In another, the flange is held between a screw and a lever having a V-shaped head; if the slot is not] vertical, the screw may be omitted. In another, the bottom of the flange either presses against a wedge or rests in a V-recess; the head of the lever lifts the spindle and sets the flange free.

[Printed, 10d. Drawings.]

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A.D. 1859, May 20.—N° 1241.

WALKER, GEORGE. — “Improvements in swing looking-glasses.” A base piece is connected to a stand (on which it can move) by a screw; a plate of metal at the bottom of the base and a washer prevent “rubbing or scratching;” and to hinder the base “from canting over” a hooked staple is fixed into the stand, the hooked part “passing over the edge of the plate.” The glass frame is joined to the base in either of the following ways:—1. A piece of metal, having two pins with spherical heads, is screwed to the base; the heads of the pins “are embraced by pieces of metal,” one of which is let into the bottom of the frame and connects the heads to the frame by a thumbscrew, which passes through the piece and enters a screwed hole in the other. 2. A metal plate, fixed to the under side of the frame, is hinged to another plate by a pin which passes through both; the hinged part of the upper plate has a slot in it to allow it to move freely over a thumbscrew, which is inserted into a screwed hole formed in the hinged part of the lower plate. If two glasses are mounted on one stand, the connecting screws are placed “out of the centre of the bases,” so that the glasses may “approach and recede from each other by reason of their excentric motion.”

[Printed, 10d. Drawing.]

A.D. 1859, May 25.—N° 1290.

MAW, EDWIN.—(*Provisional protection only.*)—“Improvements in the construction of metallic bedsteads and other furniture.” The posts are of “concave iron or other metal;” the side rails are made “with two beads or flanges;” they are joined “by means of a sliding fastening with an oblong guide or slot in it connected to the post or leg by a nut or screw. The convex part of the fastening goes into the concave part of the post or leg, and comes against the side frames, and keeps them in their proper position when the bedstead is in use.” The head and foot frames are of concave metal.

[Printed, 4d. No Drawings.]

A.D. 1859, May 31.—N° 1347.

SUTER, ALFRED.—“A furniture castor.” The moveable part “is composed of one or two wheels or half spheres divided, if two

"wheels, by a piece of metal or other hard substance," through which the axle of the wheel or wheels passes. "A pin is placed in the center of the disc or upper part of the case in which the wheels are nearly enclosed, which pin slips into a hole made partly through the piece that divides the wheels very near the axle hole." This arrangement of parts permits the wheel or wheels to act freely upon the floor and to rotate round the pin freely in any direction. Or the pin may pass quite through the centre piece, "the friction then being upon the upper part of the center piece instead of upon the point of the pin." The space required for this motion to act in "being only about one-fourth in excess of the diameter of the wheels," enables them to be concealed in a case screwed or otherwise fastened to the socket or plate.

[Printed, 4d. No Drawings.]

A.D. 1859, June 7.—N^o 1386. (* *)

CORNISH, KENNETH HENRY.—(*Provisional protection only.*)—"The objects of the invention are to manufacture bedsteads with greater simplicity and economy than hitherto, and to give increased elasticity to the bed," by means of laths which are arched or curved upwards, instead of straight. This arrangement is applicable to couches, sofas, litters, settees, chairs, and other seats and reclining surfaces; also to the seats of railway carriages, steamboats, and ships.

[Printed, 6d. Drawing.]

A.D. 1859, June 17.—N^o 1458.

EVETTE, HENRI.—"A new system of bedding," applicable to beds, mattresses, bolsters, and pillows, and "enabling them to be easily folded into comparatively small compass." Springs, fastenings, and "new accessory parts" are employed. In the spring the upper cone is sometimes larger than the lower; "the usual circular termination" of the last spirals is replaced "by terminations of the most varied kind." The fastenings are of any suitable material; the ends of the springs are fixed to them or wound round them; "their function" is to form pivots of hinges, so that the article constructed may be rolled up like "an ordinary mattress." The accessories are "stiffening bars," made of various substances, but by preference of stout iron wire, and

"formed" of two parts jointed together so as to form a hinge;" they are "placed inside the object to sustain the separation of the parts in their length and breadth." A "new torsion spring" is described; two pieces of iron wire are bent so as to form with a grooved rod between them a rectangle; the ends of the wires are twisted and so attached to the rod that the whole constitutes "a double spring and double hinge;" it is "more specially applied" as stretcher to the extremities of the article." The springs, fastenings, &c. are preserved from oxidation by coating them wholly or partially with any mixture or solution used for preserving iron from damp. The patentee details his method of constructing beds, &c. He sometimes combines in one construction bed, mattress, bolster, and pillow, adding thereto trunks at head and foot, or "in the lower bed or in the mattress." The various articles may be made in several parts to be united in forming a whole.

[Printed, 8d. Drawing.]

A.D. 1859, June 20.—N^o 1478.

DEWEY, LORING DANIEL.—(*A communication from Charles Robinson.*)—(*Provisional protection only.*)—"Improvements in "spring seats for chairs, sofas, couches, carriages, and other similar articles." The seat is constructed as follows:—Within an ordinary frame "two supporting plates of wood" are placed "nearly filling the enclosed space." The outer edge of each plate is fastened to the frame "by elastic bands of shined cloth" or other suitable material. The inner edges are joined by an elastic band secured to arms or blocks, which extend downward from near the inner edges, "half-way from end to end;" or they are supported by "a bent piece of spring sheet steel," which is screwed to the plates near their outer edges. For chairs and such like articles, "the inner edges are shaved thin, so as to form a hollow" when the spring is straight.

[Printed, 4d. No Drawings.]

A.D. 1859, July 2.—N^o 1585.

HARRIS, HENRY.—(*Provisional protection only.*)—"An improved method of connecting together the parts of which bedsteads and other furniture are composed." Upon each end of the side pieces of a bedstead, table, &c., is fixed "a flush horse-

" shoe shaped casting, formed with bevilled edges inside;" and to the posts or legs is let in and secured " a flat piece of metal " with bevilled edges," so formed as to fit into the other piece.

[Printed, 4d. No Drawings.]

A.D. 1859, July 12.—N^o 1652.

LUIS, JOZÉ. — (*A communication from Bernard Joachim La Mothe.*)—"Improvements in railway car seats and arm chairs." The back of the chair is made moveable "so as to take a " position more or less sloping " at the will of the occupant. Any material may be employed in the construction, and the back, seat, and arms may be stuffed or not. The arms and the legs are united by "a strong wooden or metal fastening," and a groove or slide furnished with a roller "is firmly attached at a proper height " on each side of the chair to the frame or legs." Two metal elliptical springs slide in the grooves; they are united "at a " distance conformable to the desired width of the seat" by a piece of "sheet iron, wire gauze, wood, or other substance, which " serves as the seat." The back "is fastened to the arms or " frame of the chair in such a manner as to be subject to the " movement of the seat," and by attaching it "to the chair by " means of a moveable iron rod or bar on each side having their " support on the arms," it can be made "to act on either side of " the seat." A foot rest may be connected with the seat and be kept under it when not in use; "it can be made to advance either by " means of springs or otherwise." The rollers may be dispensed with; the seat may be made "to move in a simple slide " instead of on springs; and the seat or back or both may be secured in any position by a catch.

[Printed, 8d. Drawing.]

A.D. 1859, July 15.—N^o 1675.

DE CHATEAUNEUF, HECTOR GRAND.—(*Provisional protection only.*)—"An improved coverlet, called zephyr eider-down " coverlet," and intended as a substitute for coverlets stuffed with down, feathers, wadding, horsehair, or wool. It is made of any tissue, rendered air-tight by means of any suitable varnish or composition, but the patentee prefers "common oil varnish, with " the addition of some gum copal." The tissue "is sewn up in " such manner as to form an air-tight recipient of any suitable

"size or form," and the seams are hermetically closed "by glue-
ing or otherwise applying over them strips of impervious
tissue." A screw tassel inserted into one of the corners serves
to fill the interior with air.

[Printed, 4d. No Drawings.]

A.D. 1859, July 18.—N^o 1692.

CRAMER, HENRY CHRISTOPHE MARTIN.—"Improvements in
"bedsteads," that is to say in wooden bedsteads. Metallic strips,
formed with tenons or tongues, are affixed to the posts, and similar
strips, having in them corresponding grooves or slots, to the side
and end pieces. The tongues are either dovetail, or T, or tube
shaped. The side, end, head and foot pieces, may be made in
parts and joined in like manner as the posts and sides.

[Printed, 10d. Drawing.]

A.D. 1859, July 21.—N^o 1712.

WELCH, GEORGE.—"An improvement or improvements in the
"manufacture of frames for mirrors, pictures, and other articles."
The first part of this invention relates to frames, the second to
"joints for supporting the frames of mirrors." The frames are
made either of papier mâché (or any composition which may be
used as a substitute), or of sheet iron, zinc, or other sheet metal
or alloy which can be raised in dies. The papier mâché is moulded
in dies and pressed therein by stamps or presses; the metal
frames are made "by means of dies operated upon by a stamp or
"press," and, if they are of small size, they are made in one
piece; otherwise in two or more pieces and soldered together;
the frames, of whatever material, are finished by japanning or
gilding. In the stamping, "the frame constitutes a border round
"the sheet metal, which has been subjected to the action of the
"stamp;" two of these stamped pieces are soldered back to
back, but before doing so, "the central metal" is cut out from
each (the front one being cut less than the other, so that the glass
can be inserted from the back); the back is replaced "and screwed
"to pummels in the front frame." A pattern is raised (by pre-
ference) on the back plate to increase its strength. "When the
"frames have straight sides, the pieces from which they are made
"are stamped in travelling dies," or are drawn through a draw
plate on a mandril. The back of a large frame is sometimes made

in three pieces; the outside pieces are fixed in their places by a middle raised piece, and all are screwed to the frame. There are four methods described of connecting mirrors with their stands.

1. Two brackets are soldered or riveted to the back; the brackets are joined by a rod within a tube, which carries also inside a coiled spring fixed to it at its middle; the ends of the spring press against the sides of the brackets, "with so much friction as to preserve the mirror at any required position." Sometimes the tube is divided "transversely at the middle," and two discs placed at the division are "pressed together by the springs contained in the tubes."
2. This is the employment of a ball and socket joint; the cup, which presses the ball against the socket, may be raised by a coiled spring; or the ball may be pressed against the socket by a short coiled spring "contained in the lower half of the said socket."
3. The supporting joint consists of "two cupped discs connected by a central axis," and "capable of turning upon one another on the said axis." A coiled or other spring is placed between the discs, its ends pressing against their sides. This joint may be used as a central or as a bottom joint; or two of such joints may be used as side joints, or as side and bottom joints.
4. This joint consists of a spring arm fixed to the top or side of the pillar; in the arm is a recess, in which the axis of the mirror turns, being "held by the elasticity of the said spring arm." A joint of this kind "is employed at either end of the axis of the glass."

[Printed, 8d. Drawing.]

A.D. 1859, August 15.—Nº 1881.

KISKY, CHARLES, and JONES, WILLIAM.—(*Provisional protection only.*)—"Improvements in the construction of sideboards." This sideboard "admits of being readily converted into a bagatelle board," and "is also fitted in the division set apart for the cellaret with a means for facilitating access to the decanters or bottles contained therein." The frame, which is supported by the pedestals, is made (instead of with drawers) "with a sliding bagatelle board, which is covered over and shut in by a hinged cover forming the top of the sideboard." By raising the cover the bagatelle board is exposed, and it may then "be drawn out laterally in the parallel guides which support it sufficiently far to prevent the player from being incommoded

" by the proximity of the wall against which the sideboard may stand." In the cellaret "a rotary stand or turntable, fitted with cups or recesses," is substituted for the ordinary sliding drawer. The drawers, whose place is occupied by the bagatelle board, "may be arranged, if required, under the board in the open space between the pedestals."

[Printed, 4d. No Drawings.]

A.D. 1859, August 23.—N° 1924.

HOPE, ASHFIELD CHURCH.—(*A communication from William Amos Scarbrough Westoby.*)—(*Provisional protection only.*)—"The manufacture of a new material from Spanish moss, applicable as a substitute for horse-hair." The moss, when it has been prepared somewhat after the manner of flax, "is dyed of a deep black colour and operated on in a carding machine so as to produce a uniform sliver." The sliver is twisted in the manner practised by rope makers, and is then ready for use.

[Printed, 4d. No Drawings.]

A.D. 1859, August 26.—N° 1945.

BIRD, THOMAS.—"Improvements in castors." These castors are composed of a plate (which may have a socket fixed on it), a ball and a cap. The plate is of any suitable metal or material; in it is a circular hole in which the ball is placed; the hole "varies in diameter according to the size of the ball;" the edge should bear or rest upon the ball "at or about one-sixth of the circumference." The hole may be "triangular, square, or of any other shaped figure, so that the ball may rest against a number of points;" or instead of a hole "a rim, edges, or points," can be raised, against which the ball will act. "A skeleton, plain, or ornamental cap for the purpose of preventing the removal of the ball from its place" is united to the plate "by an external and internal screw." The castor may be made "a spherical insulator peculiarly applicable to pianofortes and some other musical instruments" by using glass for the ball and cast iron for the plate; the ball however may be of other material. A piece of india-rubber, leather, or other suitable substance is placed between the plate and the article of furniture to prevent noise.

" It is important to maintain a just proportion between the size
" of the ball and the hole or rim."

[Printed, 6d. Drawing.]

A.D. 1859, August 30.—N° 1972.

COLLIER, GEORGE.—"Improvements in chairs and couches."
This invention applies to chairs, in which the seat frame supported
on cross legs has the back frame jointed to it, and the seat formed
of a single cushion is attached to the front rail of the seat frame
and to the upper rail of the back frame. Springs are coiled
round the back rail of the chair; their ends extend upwards and
are secured to the back frame, which has consequently a tendency
" to assume its most upright position." Folding arms are pin-
jointed to the back frame and to the side rails and at their
uprights; they can be extended and contracted and retained in
any position by racks and catches. The back frame is held at
any inclination by catches; and by adding "an additional frame
" to form a continuation of the seat, the chair is convertible into
" a couch." The springs can be applied in such manner that
the back "can fold down flat with the seat."

[Printed, 1s. Drawings.]

A.D. 1859, September 10.—N° 2067. (* *)

POLLOCK, JOSEPH.—(*Provisional protection only.*)—"Improve-
" ments in the manufacture of beds, couches, and invalid or
" other carriages." These are "in the adaptation to an ordinary
" bed or couch, or to any suitable frame of wood or metal, of a
" moveable frame formed of four unequal parts or divisions,
" attached to each other by hinges or other suitable means."
" One of these parts is attached permanently to the bedstead or
" frame, and the remaining three are capable of being elevated or
" depressed to any required angle by means of metallie or other
" toothed segments, which may be fixed in any position by palls
" or pivots attached to the standing frame or bedstead."

[Printed, 4d. No Drawings.]

A.D. 1859, September 28.—N° 2196.

STANFORD, JOHN FORDHAM.—"An improved apparatus for
" giving warmth to the lower extremities and members of invalids

"and others when travelling or in churches, chapels, theatres, rooms, carriages, and other similar places, and on ship-board, & also for airing carriages." This apparatus is made as either a footstool or a settee or a bed warmer. In the first case, a box is prepared by preference of metal; it is covered with any suitable fabric, and the top is stuffed with horsehair or with any spring stuffing. Inside the box is a "revolving or rolling lamp" hung "in frames on gimbles in order that it may not be upset;" it is suspended between two plates, the upper of which is perforated with numerous holes. "An inverted hollow cup or dome" is fixed above the lamp, and from the dome four tubular flues "proceed and open out at the sides of the stool." Air is admitted below the upper plate by a grating or gratings at the side or sides. More or less flues may be used; and, when the stool is intended for a carriage, "only a single flue is used, and provision is made "to connect it with an outlet in the bottom" of the carriage. The manner of constructing the stool and of suspending the lamp therein may be varied. In a settee a box and lamp are employed, "arranged similarly to the interior of the footstool," but the flues pass out of the box and "are conducted to and enclosed within the seat and back of the settee." The box "may be formed suitable for a footstool" so that "the feet of the person may be warmed when sitting." In the third case, a tube leading from the dome is "to be connected by a flexible or other tube with metal tubes arranged within a bed, which by preference should be rendered elastic by metal springs."

[Printed, 6d. Drawing.]

A.D. 1859, October 15.—N^o 2358.

MONTANARI, NAPOLEON.—"An improved apparatus for aiding children in learning to walk." A hoop at bottom has secured to it spokes, the upper ends of which are fixed in a smaller hoop; the whole frame moves on castors. Within the upper hoop is placed a "suspending seat" composed of a soft pad resting on straps which pass through slots in a flanged circular band; this band drops into the upper hoop and rotates "with the child without the whole apparatus;" the straps are lengthened or shortened by buckles or buttons. The apparatus may be rendered portable by making the hoops in parts and screwing the spokes into them; it may be made "with a double hoop at top, which can be raised

"by means of telescopic tubes." Various additions and amusements may be appended to the apparatus.

[Printed, 6d. Drawing.]

A.D. 1859, October 31.—N^o 2479.

NEWBY, THOMAS CAUTLEY, and RAINÉ, JULES ADOLPHE.—(*Provisional protection only.*)—"Improvements in portable bedsteads & spring mattresses." The bedstead is constructed with a hinge joint in the middle of the length, so that "the centre part folds and rises upwards midway between the posts." The "frame of the bottom" consists of two rectangles, united by a rule joint (a leg may be introduced at this point if desired); it is supported on and jointed to arms fixed on the posts. Each pair of end posts is connected by a stretcher, one of which, having a moveable stop piece attached to it, "serves as a stop for the bedstead frame or bottom when extended." In each rectangle is fitted and fixed a spring mattress. Holes are bored round the angle bars of the frames for sewing thereto a cover of canvas or other material, and straps and webbing if necessary. No springs are placed "immediately adjoining the ends next the posts to avoid interference with the collapsing." These ends are distended by straps or hooks which fasten them to the stretchers.

[Printed, 4d. No Drawings.]

A.D. 1859, November 21.—N^o 2632.

COWAN, JOSEPH.—"Improvements in 'bracing' or connecting the angles or corners of chairs and other like articles of cabinet furniture." The braces employed are rods of iron having their ends bent at right angles. The ends, which are sometimes jagged to prevent their being drawn out, are inserted into holes in the sides of the frame. The horizontal portion of the brace in contact with the sides fits into grooves, so that the whole when driven home lies flush with the frame.

[Printed, 6d. Drawing.]

A.D. 1859, November 26.—N^o 2674.

LUKIN, AUGUSTUS STEPHEN.—(*Provisional protection only.*)—"Improvements in apparatus for drawing window blinds." A spring is fixed at one end to an inner tube, and at the other to an outer tube. Either tube is secured to the window frame, and the

moveable one has a cord pulley connected to it. Or the moveable tube may be dispensed with, and the pulley made to work in a slot in the fixed tube, a pin "projecting inwards from the pulley to connect the spring to." Or the pulley "may be attached to a rod sliding through the top of a fixed tube," the rod being connected to the spring contained in the tube. The spring may be applied to an ordinary blind rack by attaching it to the cord pulley.

[Printed, 4d. No Drawings.]

A.D. 1859, December 1.—N° 2716.

GEYELIN, GEORGE KENNEDY.—(*Provisional protection only.*)
—"Making close folding metallic spring laths, mattresses, and bedsteads." The patentee thus briefly describes his invention:—
"To the usual folding iron frames I fix an upper web of metallic laths, which can be fixed to the extreme ends of the frame by means of springs or without. The laths are rivetted to hinges in the centre, and the springs, which are self-adjusting or moveable, are fixed between the iron frame and the upper web of metallic laths."

[Printed, 4d. No Drawing.]

A.D. 1859, December 5.—N° 2747. (* *)

KELLY, EDWARD.—"An improved washstand, part of which is also applicable for other useful purposes."

"My improvements in washstands consist in providing a reservoir so situated that the water it contains shall flow, when required, from the reservoir through the waterway of a peculiar constructed cap connected with the reservoir, and to a perforated plate and socket fitting the bottom of the wash-basin, and to a lower or waste reservoir a delivery or waste pipe is attached. . . . By turning the plug of the tap underneath the basin in one direction the water will flow from the reservoir through the tap, and descend through the metallic perforated bottom in the basin, and when a sufficient quantity has flowed into the basin the connection may be cut off, and after using the water, by turning the tap in another direction it will flow from the basin into the waste reservoir, . . . and, in some instances, I connect the waste pipe to a suitable hollow ground plug, over which a collar works, having a spout formed or soldered to it, so that

“ when the spout is standing up the connection with the waterway
“ of the waste pipe is cut off, but by turning the spout down,
“ the waterway will be opened, thereby allowing the waste water
“ to descend and run out laterally into a pail for removal.”

[Printed, 10d. Drawing.]

A.D. 1859, December 5.—N^o 2752.

FELDWICK, GEORGE.—“ An improvement in roller blinds.”
One end of the roller carries “a deep flange pulley,” to the outer side of which a ratchet wheel is secured. On the inner side of the bracket is centred a lever, one end of which carries a weighted pawl, the other an eye through which the cord passes. When the blind is at rest, the pawl takes into the ratchet. As soon as the cord is pulled, the pawl is raised, and the weight of the blind rod causes the blind to unroll. To prevent the blind from being torn in case of an attempt to draw it down without using the cord, the roller is fitted “somewhat loosely in the body of the
“ ratchet wheel.”

[Printed, 6d. Drawing.]

A.D. 1859, December 8.—N^o 2787.

ELLIOTT, FREDERICK HENRY, and ELLIOTT, CHARLES ALFRED.—“ An improved method of preventing drawing boards
“ and other flat wooden surfaces from warping or twisting, and
“ of adding to the strength thereof.” Circular boards, tables and panels are included in this invention. It consists in cutting a groove at each end of the board, “at right angles or nearly so
“ to the direction of the grain of the wood,” and in laying therein a bar or strip of steel or iron (by preference of hardened steel). In circular boards and table tops a ring of steel or iron is let into a channel formed near the edge. “A veneer of the same material
“ as that of which the table top or board is made is laid over the
“ metal and lies flush with the surface.”

[Printed, 6d. Drawing.]

A.D. 1859, December 13.—N^o 2825.]

VINALL, CALEB.—(*Provisional protection only.*)—“ Improve-
“ ments in and mechanism for retaining the rollers of window
“ blinds, maps, and other articles requiring to be wound on

"rollers." A collar, the outer end of which is rounded, is formed on the axle of the pulley, "so that there is an interstice" between the pulley and the collar. The bracket, "formed with a step and also with a groove," receives the axle in the interstice. A spring is affixed to the bracket at the step; it "has a hollow formed in it, and is so continued round that it presses tightly" on the end of the collar, the round end fitting in the hollow and so being "kept in its place in the groove." The other end of the roller may be hung in the ordinary manner or supplied with another pulley and cord, so that the blind may be pulled down thereby, and the customary cord and tassel dispensed with.

[Printed, 4s. No Drawings.]

A.D. 1859, December 14.—N° 2834.

HULSE, WILLIAM.—"Improvements in the manufacture and ornamentation of metallic bedsteads and other articles of like manufacture, and in apparatus and machinery employed therein." The inventions claimed are "the method of and apparatus employed in," 1, manufacturing the corner blocks of metallic bedsteads and the dovetail joints of the same; 2, casting dovetails on the angle iron of the side and end rails; 3, ornamenting the pillars or tubes used in constructing bedsteads. The mould, in which the blocks and dovetails are cast, has two vertical sides; a hole in the middle for the insertion of the pillar; two slots for receiving projections "on the under side of the pattern dovetails;" and a cover consisting of two pieces. On the under side of the cover are blocks "which join diagonally when the cover is put on." The get is formed in the cover. The mould for casting the dovetails on the angle iron is placed in an inclined position when in use, and supported on rails. "The body" is cast in a box in which "one of the model dovetails" is placed. A cover, in which the get is formed, is put on and fits on pegs projecting from the box. There are slots in the box for the angle iron to pass through; the get, through which the melted metal is poured for uniting the angle iron to the body, is partly in the box and partly in the mould. The machine for ornamentation "consists essentially of a roller or cylinder" made of steel or iron case-hardened, on the surface of which lines or depressions are cut or turned. The pillar or tube is placed under the roller and at right angles thereto. After the roller has passed

from end to end of the pillar, it is raised, and the pillar is rolled a short distance across the bed of the machine; another portion of the pillar is thereby presented to a different portion of the roller; these actions are repeated until all sides of the pillar have been operated upon by the roller. The pattern to be left blank upon the pillar "is cut away on the surface of the roller." The patentee details the various parts and "the motions of the several parts of the machine."

[Printed, 1s. Drawings.]

A.D. 1859, December 20.—N° 2892.

FAIRCLOUGH, JAMES.—"Improvements in bed bottoms and other similar structures." This invention is described with reference to a bed bottom; the springs employed are either india-rubber "of a circular ring or washer shape," or metallic springs of a C or S shape, or helical draw springs. The bed frame is of wood or other substance, rectangular, formed by "two side pieces placed on edge and having each of the ends constructed of three pieces," namely a "lower flat bar," a "square or nearly square rod," and a "flat bar placed above." The two last-mentioned are connected by "transverse horizontal pins" supporting india-rubber rings whereby the laths are suspended. Straps or webbing keep the laths "from separating or coming in contact with each other," screw bolts and nuts connect "the upper and lower portions of the ends of the frame together," and a "small truss post" prevents deflection. The metallic springs are attached "to a rectangular frame and to the under sides of the bed laths in such a way that they will always have an outward drawing action at both ends of the laths, so as to prevent their sagging." Or the laths "may be suspended to their rectangular frame by spiral or helical draw springs, on the principle of the Salter's balance." The laths may be placed "transversely in place of longitudinally."

[Printed, 6d. Drawing.]

A.D. 1859, December 23.—N° 2929.

TELFORD, RICHARD.—(*Provisional protection only.*)—"Improvements in castors." The first part of this invention has for its object "the construction of castors in such a manner as to

"relieve the centre pin from the strain to which it is ordinarily subjected." For this purpose "the upper part of the horn or carriage is formed with a hook at the back which embraces a projecting flange on the lower edge of the socket;" by this contrivance "the downward strain is sustained by the hook," and the upward strain "is borne principally by the front portion of the horn or carriage bearing up against the socket." The required connection between the lower part of the socket and the upper part of the horn may be formed by means of a groove or by other means. The second part is the application of a spring or springs to the centre pin "so as to have a bearing against a collar or other fixed part of the socket by means of which the centre pin is immediately restored to its vertical position," when any uneven surface has been passed over. The third part consists "in the manufacture of dumb castors composed of glass or other material" in the form of "a solid half ball with a stem having a screw thread on it."

[Printed, 4d. No Drawings.]

A.D. 1859, December 24.—N° 2935.

GEYELIN, GEORGE KENNEDY.—(*Provisional protection only.*)—"Making transparent metallic twisted columns, pillars, tubes, etc., for bedsteads, gaseliers, building, warming, and other purposes." The following is the short description given of this invention:—"The metal, either solid or in tubes, is twisted in one or more threads round a mandril, which can then be withdrawn; the ends can be fixed to a plate either by soldering, casting, or otherwise, for ornamental and strengthening purposes; the centre part of the column, etc., can be fitted with a coloured glass tube or other materials, and the outside with a reversed thread; the same principle can be adopted for twisting glass."

[Printed, 4d. No Drawings.]

A.D. 1859, December 24.—N° 2938. (* *)

HILL, ROBERT GARDINER.—"An improved fire-escape."

This invention "relates to a peculiar arrangement and construction of apparatus for saving persons and property from fire, and raising and lowering weights."

In describing the mode of carrying the invention into effect, the patentee says:—"I term my invention the ottoman fire-escape,

“ for the reason that it can be used as an ottoman or other suitable piece of furniture when not required as a fire escape, but I deem the form of an ottoman best adapted to the purpose, although I do not wish it to be understood that I restrict myself to any particular form or piece of furniture. It consists of a strong cradle or frame, which may be made of wood or iron, or other suitable material, the whole firmly tied or braced together by rods and straps; it is open at the top, and is constructed with a door or doors in the sides for the convenience of persons passing to and from the machine; the outside may be covered with non-inflammable canvass, leather, rope, or wire netting, or brass or iron rods, or other suitable material, the whole being enclosed in a covering of chintz, or any other fabric, thus forming an ottoman. The frame or cradle is furnished with a system of pulleys and blocks, to which is attached a chain fastened by a hook to a ring in the floor near the window, on the window sill, or other convenient place; it is also provided with a castor or friction wheel at each corner, upon which the machine stands when not in use as a fire escape, but when adjusted and hanging at the window ready to receive persons or property these castors or wheels cause the machine to pass easily down the surface of wall in its descent to the street or garden, as the case may be.”

[Printed, &c. Drawing.]

A.D. 1859, December 28.—N^o 2960.

DRESSLER, FREDERICK.—“ Improvements in dining and other tables, which improvements are applicable to other articles of furniture.” Three applications of this invention are described; in each the leaves or extra parts slide one under the other beneath the top. The first is to a table “with a permanent top” mounted on a fixed frame and supported on four legs or on a pillar and claws. “To the under side of the top at the middle of its length” two tenons are hinged which slide in mortises in the frame. In the frame are bars which slide “in an inclined direction;” they carry the leaves which “are thus drawn out from each end;” they are provided with guides, rollers, and stops. The permanent top “rises a little at the same time to permit of the inclined rise” of the leaves and descends again to its level. “A further extension may take place by fitting inclined sides with their leaves under and in connection with the bars;” extra legs may be attached to the

slide bars. The second is to a table whose top and frame are in two parts; the ends of the top are hinged to the end bars of the frame; in this case the leaves slide up between the top when the frame is expanded; and "lifts" are employed to raise the inner ends of the top "previous to closing the table." The third is to a military chest, which by similar additions may be converted into "a camp table, a camp bed, or a writing desk." Chairs may also be converted into couches by constructing the frames so as to draw out with or without cushions attached thereto.

[Printed, 1s. 4d. Drawings.]

1860.

A.D. 1860, January 13.—N° 94.

MITCHELL, AURELIUS BRUCE.—"An improvement or improvements in ornamenting brass knobs for doors, drawers, cupboards, and for other like purposes." The ornaments which the patentee prefers to employ are "rosettes of glass, having when colorless foil behind them, which said foil may be colored or colorless, ornaments of china, plain or painted, or colorless or colored enamel." The body of the knob is made from sheet brass, and a recess or depression is formed "at that part of the blank which constitutes the centre of the face in the finished knob." The ornament is placed in the recess, the edges of which are closed upon it "by means of a press or burnishing tool or otherwise." When the knob is cast the recess is made "by the casting process," and the ornament is fixed therein "by cement or otherwise." In addition to the central ornament there are sometimes applied to the face of the knob small ornaments of glass or china, "disposed concentrically about the ornament and fixed in any convenient manner." The central ornaments may be made to lie flush or nearly flush with the face of the knobs or to project more or less.

[Printed, 6d. Drawing.]

A.D. 1860, January 14.—N° 104. (* *)

DAVIS, JOHN.—(*Provisional protection only.*)—"Improvements in music stands, part of which is also applicable to tents for military and other purposes."

"I construct the vertical or centre pole of the music stand of tubes in the telescopic form, so as to regulate the stand to the required height, and sustain it there by clamp screws or other suitable means. I fix the lower end of the said pole in a socket or base, and joint thereto legs or standards, which can be spread out to afford steadiness when the stand is in use, and fold up when not in use, the said joints being arranged so that the legs may radiate from the centre, or be placed in a skewed position. I make the book desk of links jointed together, so that it can be opened out or folded up with great facility, and I attach it to the top of the pole by a joint having a screw and nut, in order to tighten the desk and adjust it to the desired angle for use. The aforesaid arrangements enable me to construct a music stand of extreme lightness and portability, all the parts being connected together without being disjointed, so that they can be opened and closed with wonderful rapidity, without occupying more space than an ordinary telescope."

[Printed, 4d. No Drawings.]

A.D. 1860, January 18.—N^o 134.

SCHUBERTH, JOHANN.—(*Provisional protection only.*)—"Improvements in nails and similar articles, and in preparing materials for the production thereof, and of buttons and various other articles to which the same may be applicable." Castor wheels are included in the "other articles." The invention consists in manufacturing the heads of nails, buttons, &c. "of porcelain or other clay or earth, or of cement, or of wood chips or shavings, or wood waste." The porcelain (and like substance) "is pressed, turned, beaten, or brought into the required shape, dried, glazed, and fired." A recess is left for the reception of a shank or pin, "which is affixed therein by soldering, rivetting, pressure, or cementing." There are two formulæ given for a cement; the one contains "plaster of Paris, lime water, white of egg, or glair, and pure oil;" the other consists of "unslacked lime, white of egg, glair, or albumen, and slacked lime or glue, which can be liquefied by pure oil, preferring to take two parts unslacked lime to one part glair and one part slacked lime." The heads may be "colored or marbled by painting or by combining coloring matter with the material while in a plastic or pasty state or otherwise." Heads are pro-

duced from wood refuse "by pressure in moulds, the shank or " pin being forced in or otherwise connected." To obtain " considerable whiteness " and " excessive hardness " for the porcelain and earthen heads the patentee employs "for the burning " operation a peculiar fire flame or medium, consisting of the gas " evolved from beech wood, combustion being assisted by free " draughts of cold air."

[Printed, 4d. No Drawings.]

A.D. 1860, January 20.—N° 147.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD. — "Improvements in the manufacture of chairs, " bedsteads, and other articles to sit or recline on." The first part of this invention relates to the construction of a metallic chair which is convertible into a bedstead. The back, seat, and legs are united in any convenient manner. "The back need not " be fixed, but may be made to recline." To the front of the seat is jointed a frame on which the arms are formed, serving as legs when the frame is unfolded. To the front of this frame a second frame with folding legs is jointed, "which when folded " packs within it." A third frame may be jointed to the second, and the arms may be formed on it and serve as legs; this frame folds back on the first. Sometimes one arm is attached to a folding frame, and the other to the back and seat. The seat cushion may be fixed in a frame jointed to the back. This frame lifts that the others may be folded underneath it. The second part to "garden and other chairs;" they are made with a frame hinged to one or both sides. The frame with an arm fixed to it unfolds laterally, the arm serving as a leg. The third part "consists in making the framed head and foot rails of metallic " bedsteads of a curved or bent form in the horizontal section;" the preferable method of producing such rails is detailed. The fourth consists in forming the joints of side and end rails "of a " cylindrical form, that is a male and female cylinder in combination with two incline planes, one on the cast joint, and the " other at the end of the rail."

[Printed, 10d. Drawing.]

A.D. 1860, February 4.—N° 309.

SMITH, JOHN. — "Improvements in the manufacture of furniture for doors and drawers, bell levers, curtain band, &c."

“ pole, and lamp and chandelier enrichments, and the ornamental parts of other similar articles.” This invention consists in the production of the above articles and “ bowls for castors ” from or partly from “ a composition or plastic material not hitherto used for these purposes.” The ingredients for a black composition are mainly “ shellac, ebony dust, and charcoal.” In colored compositions “ the charcoal must be omitted or reduced in quantity, and any suitable colouring matter, such as powdered pigments, must be added.” The composition is made and subsequently manufactured as follows :—One pound of shellac is dissolved by heat on a flat iron slab and mixed with an equal quantity by bulk of ebony dust, after which the coloring matter is added, namely, “ for an intense black,” three ounces of black asphaltum reduced to a fine powder, and three ounces of ivory black, or charcoal powder, or lamp black (ivory black being introduced only where hardness is desired). For a chocolate or brown tint brown asphaltum is substituted for black with an ounce (more or less) of the ordinary rouge of commerce. To produce green, blue, or other dark colour any suitable coloring matter is employed “ in proportions which must be governed by the nature of the pigment employed and the depth of tint desired.” For light colours the principal agent is the dust of boxwood, “ to which, if a still lighter tint be required, a more intense white, in the shape of pigment, may be added.” All the ingredients must be mixed “ until the mass shall appear homogeneous in its nature throughout, if such property be requisite, and an even colour be demanded ; but if a veined or streaked material is to be produced this thorough amalgamation will be best avoided.” When the whole has been well mixed upon a slab on a stove whilst the lac is in a plastic state, the composition is to be placed in sufficient quantity in a suitable die ; pressure is applied, and the composition, being cooled by contact with the die, is ready to be removed in a finished state. If greater density is desired, that quality may be produced by the addition “ of mineral substances ; ” if greater tenacity, “ vegetable fibre other than wood dust ” may be added ; if greater lightness as well as greater strength, paper pulp may be mixed up therewith ; to give still greater strength and to economize the composition, it is moulded “ upon cores or blanks of any stronger and cheap material, such as metal or wood.”

[Printed 4d. No Drawings.]

A.D. 1860, February 7.—N° 326.

NEWTON, WILLIAM EDWARD. — (*A communication from Valorus Drew.*)—"Improvements in the fittings of sunshades or "roller blinds," namely, in arranging the cord, in fixing the roller in the window casing, and in fastening the blind to the roller. A groove is cut round one end of the roller, and an endless cord is fitted within it. At the lower part of the cord hangs a ring; through this passes a second cord, having at one end a metal eye provided with "a central cross bar;" the other end of the cord also passes through the eye, and bearing on the bar is permanently fixed to the window frame. "The tighter the cords are strained the less liable the eye will be to slip." The roller, near one end, "is slotted longitudinally a requisite distance from its periphery to its centre;" a journal or pin is fitted in this end, and its inner extremity "bent upwards" passes into the slot. The roller is adjusted in its bearings by thrusting the pin outwards, and it has cut in it a longitudinal groove in which (near each end) is a staple. An elastic rod, passed through a hem in the blind, fits into the groove. One end of the rod is curved upwards to form a head; this is placed against a stop by the outer side of one of the staples. A tape at the upper end of the blind is tied round the roller, the knot fitting into a recess.

[Printed, 8d. Drawing.]

A.D. 1860, February 8.—N° 331.

JENKINS, GEORGE.—(*Provisional protection only.*)—"The application of the dovetail joints in iron or other metal to wooden "bedsteads, couches, sofas, and other such like articles of furniture, together with metallic sides, ends, and laths, securely "fixed thereto by means of the dovetail joints." Upon each wooden bedpost, head or foot board, leg of couch, or other like article, is fixed "the concave portion or portions of a double or "two single dovetails, made of iron or other metal, with a plate "or plates combined." The sides and ends are made of angle or other formed iron, "with the convex portion of the dovetail cast "or otherwise secured on each end," and are made to fit into the concave portion. "I then," says the patentee, "form the "bottom of the wooden bedstead, couch, sofa, and other such "like article of furniture, with metallic laths secured to the sides

"and ends; thus I am able to retain the massive appearance of wood with the advantages of iron in elasticity, cleanliness, and portability."

[Printed, 4d. No Drawings.]

A.D. 1860, February 13.—N^o 383.

TELFORD, RICHARD.—(*Provisional protection only.*)—"Improvements in castors." Three parts of this invention will be found described in abridgment, No. 2929, dated December 23rd, 1859. The patentee now adds a fourth part, namely, "the application of vulcanite of india-rubber or vulcanized india-rubber or gutta percha to rollers for castors." The material is rolled into lengths somewhat like paper rollers or slabs of any required thickness;" it is then cut "into strips or round pieces by means of a circular saw or a band saw," or it is cut out "with a hollow punch or a bit and brace," and the pieces are pressed out by hydraulic or other power. They are next turned in a lathe and polished with rotten stone and water or "by turning them round rapidly in a tumbler or hollow cylinder, similar to a barrel churn." But the mode of manufacturing the material may be varied.

[Printed, 4d. No Drawings.]

A.D. 1860, February 13.—N^o 385.

READMAN, WILLIAM.—"An improved apparatus for communicating motion to roller blinds, maps, and other articles." An ordinary blind or map roller is supported at each end by a bracket; on its right end is a pulley "having a roughened groove" for the reception of an endless cord whose lower loop passes through a ring below. Attached to the right bracket by two projecting pins or horns is a spring, to the under side of whose lower limb is affixed a brake of metal, wood, leather, gutta percha, or other suitable material. In consequence of the pressure of the spring and brake the cord "is kept in forcible contact with the pulley," so that on pulling the cord the pulley (and therefore the roller) "is turned in whichever direction the cord is moved." In a modification the pulley has "a flat edge or edges;" the under side of the brake is curved, and the cord (not an endless one) winds upon the pulley "in the opposite direction to the blind." In this case "the blind may be drawn

"down by a cord and tassel attached to its lower edge in the usual manner, or by a cord wound upon a pulley, at the opposite end of the roller in the same direction as the blind itself." The pressure of the spring may be made adjustable in various ways. Although it is preferred to use springs, "weighted levers may in some cases be advantageously employed to give the required pressure."

[Printed, 6d. Drawing.]

A.D. 1860, February 18.—N° 453.

WINTER, EDWARD.—(*Provisional protection only*).—"Improvements in library and office tables," whereby private papers, &c. may be concealed without removing them, and the top "shall present a perfectly flat surface." The top is composed of "several separate flat pieces, fitting nicely together." The patentee describes a top made of six such pieces, four forming the corners, and two the intermediate ones longer than the others. Two of the four "are each hinged by their outer end to a drawer, each drawer being just half the length of the table;" one of the intermediate ones is formed with pigeon holes, &c. and "extends downwards the entire depth of the table;" the other serves as a writing slope and carries a receptacle for pens, &c., said slope being hinged by its edge to the front of the table and raised by two pieces of wood fixed "across the bottom" of the former. All the pieces are raised and lowered by a system of spindles, racks, and pinions, detailed in the Specification, and connected with the system is "other mechanism which unlocks all of the nests of drawers."

[Printed, 4d. No Drawings.]

A.D. 1860, February 25.—N° 522.

JENKINS, GEORGE.—"Improvements in children's metal cots or bedsteads." The bottom of the cot is composed of two frames; the side rails and end rail of the upper are so shaped that the lower may slide within them; there are brackets and rollers "for upholding and facilitating the movement of the foot frame" and set screws for holding the frames together. The cot is made "with a raised head rail, a frame, and two side frames, which may be fixed or moveable;" the frames are furnished with laths and stretchers.

[Printed, 6d. Drawing.]

A.D. 1860, February 29.—N^o 556.

BRYDEN, JOHN MILLER, and BRYDEN, WILLIAM CORBET.—“Improvements in mountings for window blinds.” On one end of the roller is fitted a metal cap with a spindle and a ratchet. The pawl is jointed to and carried by a lever centred on a pin projecting from the bracket. The lever has attached to its other end a cord, by pulling which the pawl is lifted; it is formed with a lateral projection, which, when the cord is pulled, acts upon a “friction piece” jointed to lugs formed upon the bracket; this piece presses upon the cap, thereby retarding its rotation and preventing a too rapid descent of the blind.

[Printed, 6d. Drawing.]

A.D. 1860, March 19.—N^o 719.

HEAL, JOHN HARRIS.—“Improvements in spring mattresses.” The wooden frame of the mattress is made in separate parts, “by preference three;” the springs are fixed to laths at bottom and connected to each other at top. Each part is covered with tick or the like, and “the edges which come together have strips of tick or other fabric sewn to them, and these strips are each of them connected by string or otherwise to the nearest row of springs.” Eyelet holes are formed in the strips for lacing them together.

[Printed, 6d. Drawing.]

A.D. 1860, March 26.—N^o 780.

MITCHELL, JOSEPH.—“An improvement in pullies, applicable for raising and lowering window blinds, maps, and other articles mounted upon rollers, and retaining them in a given position.” The cord in its descent from the roller pulley passes between two pulleys mounted one above the other on a bracket; these pulleys are coated with india-rubber or other suitable material, and “have frictional contact with one another” sufficient to prevent the blind from descending, except when pulled by a cord attached to it. Or the upper pulley may be mounted on a lever centred on the bracket; a spring pressing on the lever keeps the upper pulley in contact with the lower. The same effect will be produced by placing the pulleys one above and the other below the outer flange of the roller pulley. The patentee makes his roller pulley in two

parts, one consisting of an inner flange and a socket for the reception of the roller end, the other of a disc forming an outer flange and held to the socket by a pin.

[Printed, 6d. Drawing.]

A.D. 1860, March 27.—N° 787.

GILLESPIE, CHARLES.—(*A communication from Samuel Gillespie.*)—(*Provisional protection only.*)—"Improvements in bedsteads." The side rails are divided at or near the middle; the divided parts are hinged to the head and foot posts and connected to each other "by the aid of a dovetail or centre joint."

[Printed, 4d. No Drawings.]

A.D. 1860, March 29.—N° 807.

HASELTINE, GEORGE, and KNIGHT, JOHN ADAMS.—(*Partly a communication from Philip Ulmer.*)—"Improvements in spring bed bottoms." There are four methods detailed for carrying out this invention. 1. The head and foot rails have as many hollows cut from the upper side as there are to be laths; a band of india-rubber webbing "formed corrugated" is placed on the top of each rail, and the ends of the laths rest upon those parts of the webbing which are over the hollows. 2. The lath ends are united to the head and foot rails by loops; the loop consists of three parts:—an eye for attachment to the rail; a coupling link for connection to the lath; and an elastic part of india-rubber webbing inserted through the eye and link and having its ends sewn together. 3. A simple link or an "extension link" connects a spring, made as before of elastic webbing, to the lath by passing over a hook screw on the under side thereof; the other end of the spring is passed through a slot in a strip of wood screwed to the rail and is nailed to the inside of it. The strip has "its outer surface convex and its inner surface concave;" it may be "modified in form," or the rail itself may be suitably channeled or grooved. 4. Elliptical metal springs fixed to the rails are hooked to eye screws on the lath ends.

[Printed, 10d. Drawing.]

A.D. 1860, April 10.—N° 897.

TYRRELL, HARRY.—(*Provisional protection refused.*)—"An improved article of furniture." It presents outwardly "the appearance of a chifionier, a sideboard, or a press bedstead."

and contains "a bedstead, a dressing table, a washstand, a supply cistern to contain water, a looking-glass, and a night commode."

[Printed, 4d. No Drawings.]

A.D. 1860, April 13.—N° 929.

FRY, THOMAS.—"Improvements in castors for chairs and other like articles of furniture." This invention "is intended to give relief to the roller and to the arm by which it is connected to the stock or centre pin when heavily pressed upon, without interfering with the easy movement of the castor, when the article to which it is applied is not so heavily loaded as to cause such amount of pressure." The arm of the horns is suspended on the centre pin, "which may be made to enter the leg of a chair or other piece of furniture, or be otherwise applied thereto." The pin is "extended downwards through the arm of the castor nearly to the floor;" and above the arm is placed an india-rubber spring (by preference vulcanized), which, when forcibly pressed, will yield so far as to allow the pin to descend through the arm and rest upon the floor or carpet, "in order to support the heavy portion of the weight, and thus relieve the roller arm."

[Printed, 6d. Drawing.]

A.D. 1860, April 18.—N° 976.

DAVENPORT, WALTER.—(*Provisional protection only.*)—"Improvements in roller window blinds," to prevent the spiral springs from being destroyed by continually "buckling." The spring used is "of greater range for the length of wire employed;" one end is fixed to "a stationary rod, around which is the spring and barrel;" the other is attached to a block, "which is allowed to travel in a horizontal direction" within the barrel and upon the rod. The block has a groove cut in it, "which fits an indentation made within the entire length of the barrel, so that as the barrel revolves with the block, the spring will wind itself closer together;" and, when released by a pawl acting on a ratchet wheel at one end of the barrel, it will again expand. The blind "is made with a cord sewn along one end thereof, which is inserted in the groove or indentation formed on the barrel." Two or more springs may be employed in the same barrel.

[Printed, 4d. No Drawings.]

A.D. 1860, April 20.—N° 989.

DYER, JOHN, junior.—(*Provisional protection only.*)—"A new or improved process for the ornamentation of certain articles of bed-room furniture." This invention consists in preparing the surfaces of the articles, "by first coating the same with a mixture of whiting, starch, and size; and employing for the ground work or enamelling white lead, ultramarine, carmine, and driers (or the equivalent compound), in proportionate quantities suitable for producing the colour mauve in any requisite shade, the said groundwork or enamelling being subsequently lined or ornamented in any suitable colour, gilt, and varnished."

[Printed, 4d. No Drawings.]

A.D. 1860, April 21.—N° 1003.

PEYTON, EDWARD, and BATHO, WILLIAM FOTHERGILL.—"Improvements in the manufacture of metallic bedsteads," namely, in uniting the tester and curtain rods; in fixing the brackets which uphold the same; and in supporting the head pillars. A casting is fixed on the tester rod, near each end; the curtain rod, threaded at its extremities, is passed through a hole in the castings and secured by nuts or tapped rosettes. The lower end of the bracket is inserted into a socket on the pillar; one branch of the bracket terminates in an eye which passes over the threaded pin on the top of the pillar; the end of the other branch enters a socket on the tester. The pillars are supported each by a bracket, the end of which enters a socket on the pillar, while eyes on the extremities of the branches are placed over studs on the side rails.

[Printed, 10d. Drawing.]

A.D. 1860, April 25.—N° 1035.

MINASI, CARLO.—"Improvements in music stools and other seats, and in stands for supporting music books and other articles," and in the arrangement of candle stands for musical instruments. 1. Music stools:—a plate is screwed to the base of the stool "and formed upon or fixed to a tube which is to be fitted within such lower portion." The tube forms a socket for an inner tube which "may be raised or lowered without turning round," all rotary motion being prevented "by lugs upon a

" nut which by the said lugs is fixed to the outer tube and supported within and at the bottom end of the inner tube, the lugs passing through slots " in the inner tube. A clutch (with notches all around) is fixed to or formed upon the upper end of the inner tube ; this end serves as a socket for a third tube, which may be turned round by a plate formed upon or fixed to it and " screwed to the actual seat." The third tube is closed at both ends " with the exception of a square hole left for the square " shank or upper end of a screw." A spring coiled round the shank (between the lower end of the third tube and a collar on the screw) is made " to support the weight of the seat and to transfer " it by the nut to the [outer] tube and the base or lower portion " of the music stool." The bottom of the screw is cylindrical " and works easily in a guiding hole or bush " in the closed end of the inner tube, " and a washer and pin at this end support the " weight of the tube." The plate is kept clear of the clutch by the strength of the coiled spring ; it carries on its under side two projections or teeth, or (if preferred) a complete circle of teeth, " bevelled to an edge " and corresponding with the notches of the clutch. The weight of the person occupying the seat causes the teeth to engage with the notches and prevents the seat from turning round. A washer and pin at the upper end of the shank " keep " the parts together," and india-rubber springs or washers are introduced " for preventing noise." Stands and seats of various kinds can be made on the same principle. 2. Folding music stands for pianofortes :—these are made in two halves ; each works on two centres, the outer centre being placed slightly lower than the inner one, and folds down in an opposite direction. 3. Candle stands :—metal bars are fixed to the fall of the instrument and furnished with sliding clips ; the candle stands are attached to the clips, and are thereby rendered " capable of receiving the " sliding motion required."

[Printed, 10d. Drawing.]

A.D. 1860, April 26.—N^o 1053.

JOHNSON, JOHN HENRY.—(*A communication from Eugene Etienne Barbier St. Ange.*)—"Improvements in portable bedsteads, and in the mattresses to be used therewith." The bedstead is composed of six compartments, pin-jointed, and folding one within the other, so as to form a box ; the four lowest turn

under, but the fifth "turns or folds over;" each is provided with a "distended fabric or bed sacking." A frame, in an inclined position, is hinged inside the top compartment; it is covered with tick and supports a pillow. The mattress is made in five parts for packing up inside the compartments. "A bed of this construction may be made to fold up into the size and form of a soldier's knapsack." The last compartment (which "constitutes the knapsack proper"), is composed of "three sheets of metal, which form the three sides of a space, closed on the fourth side by the tick or canvass of the bed," and on the other sides "by a covering cloth or piece of fabric." The supports fold one under the other, and inclination is given to the head by moveable feet.

[Printed, 8d. Drawing.]

A.D. 1860, May 2.—N° 1108.

GARDNER, JAMES.—"Improvements in metallic bedsteads." The sides are composed each of four flat pieces of metal united by hinges. The inner pieces are hinged to central legs and are prevented from extending too far outwards by stops on the legs; the outer pieces are hinged to the top and bottom legs. The laths are fastened to two frames of angle iron, which are hinged together and lie on the side pieces. In the under side of the frames pins are inserted, which, pressing against the inner sides of the pieces, "prevent them from folding up;" notches (in which the ends of the frames rest) "prevent any longitudinal motion." The cushions "are made separate," and the bedstead is fitted with a moveable or adjustable head piece. This bedstead, when partially closed, may be used as a couch.

[Printed, 10d. Drawing.]

A.D. 1860, May 11.—N° 1170.

OWEN, JOSEPH, and VEITCH, GEORGE.—"Improvements in the construction of the bottoms of bedsteads, mattresses, couches, sofas, seats, chairs, and other articles for sitting or reclining upon, in order to render them more springy or elastic." The bottom is formed of a series of "elliptical or other similarly carved" wooden, bone, or metal springs; each extremity terminates in a hook or catch which fastens to one end of a buckle. The other end of the buckle "is hung to a loop or catch firmly attached

"to the frame of the article." The patentees sometimes "graduate the springs" by forming some with a sharper curve than others, and the buckles by using longer ones for "the more highly curved springs." Around the buckle is a friction roller, and within the roller round the buckle, a fold of leather or other suitable substance.

[Printed, 8d. Drawing.]

A.D. 1860, May 21.—N° 1252.

HOLLAND, ALFRED,—(*Provisional protection only.*)—"An improvement in the construction of roller blinds," that is to say, in the method of securing the blind to its roller. The blind is wound one or more times round the roller and embraced at suitable distances apart by steel or other metal clips.

[Printed, 4d. No Drawings.]

A.D. 1860, May 23.—N° 1279.

HOWARD, WILLIAM.—(*Provisional protection only.*)—"An improved window blind" to be used principally as a sun blind and applied outside of a window. The fabric of which the blind is formed is woven in a loom and is composed of wooden laths interwoven with twine. The upper end of the blind "is fastened to a stout grooved lath provided with hooks and eyes for attaching the same to the window," and the lower end is furnished "with a piece of half-round beading" which serves as a roller. A cord is attached to about the middle of the grooved lath, "and passes downwards under the lower end of the blind and up again over two small pulleys in the groove of the top lath, and hangs down at the side."

[Printed, 4d. No Drawings.]

A.D. 1860, May 29.—N° 1318.

DUFOSSÉ, EUGÈNE.—"A system of skeleton or framework with continuous free air currents, applicable to the construction and improvement of seats of any description, mattresses, saddles, and upholstery generally, with a view to render them 'hygienic.'" The framework consists of an upper and lower portion of wood, metal, or india-rubber of any convenient shape, and each "having an aperture in the centre which is round, square, or oblong." Between the portions are "horizontal

"channels for free air currents." If the framework is of wood, the portions "are kept apart by means of cross pieces or blocks, " which are so placed as to form either radial partitions, or may " be inserted pillar-like." Sometimes the under board is dispensed with, "as the surface on which these moveable seat " cushions (ronds-de-siège) are placed is intended to act instead " of the second board." If it is of metal, it is "formed of two " double concentric hoops which are fastened together by radial " cross pieces or spokes," the hoops being kept apart by tenons or uprights. If it is of india-rubber or india-rubber cloth, "it " may be run in one piece only, or made up of several pieces;" it may also have an air-hole provided with a screw plug, valve, &c.; across the framework the channels are arranged, "extending from " the inner periphery of the central aperture to the extremities." The framework, when of wood or metal, may be fitted with coiled or other springs, and one or both sides may be stuffed or covered with any fabric. The foregoing relates to a framework for a moveable seat; one for a fixed seat is made on the same principle but larger, and sometimes for the lower portion is substituted perforated tin plate, zinc, wire gauze, &c. In a mattress a space in the middle is left empty for the introduction of the frame; an aperture is made in the ticking corresponding to the one in the frame, but for an invalid an aperture is made on each side for the introduction of a tube. The mode of applying the invention to saddles will be found described in the series "Harness."

[Printed, 1s. Drawings.]

A.D. 1860, June 5.—N° 1383.

JENKINS, GEORGE, & JOSEPH BROTHERS.—(*Provisional protection only*.—"An improved portable arm-chair," moveable at the arms. The frame is of metal, and under each arm is a brass rack acted upon by a lever. "By raising the lever to allow the " full extent of the rack, the back of the chair will fall on a level " with the seat, and by unfolding a foot rest from the seat of the " chair the whole is formed into a couch or bed."

[Printed, 4d. No Drawings.]

A.D. 1860, June 8.—N° 1410.

KANE, GREGORY.—"The making or fabricating in wood, metal, " or other suitable substances bedsteads capable of being " lapsed into a convenient size and form for transport as persons

"luggage, and to be styled 'Kane's portable folding bedstead.'"
The bed frame is furnished with head and foot pieces, and is jointed at such distances apart that when folded up it occupies only "a space of three feet by two feet six inches by two feet." Within the frame is a "wooden framed platform for supporting the bedding," jointed so as to pack up in the same receptacle as the frame. The whole is supported on six legs and is kept in position by a brace or stretcher.

[Printed, 6d. Drawing.]

A.D. 1860, June 9.—N° 1423.

BREESE, CHARLES.—"Improvements in metal bedsteads." Each post has cast or otherwise fixed on it a lug, in which are two apertures for the reception of blocks on the end of a side and an end rail. The peculiarity of the invention is that the lug is so constructed and placed that the post "may stand out from, instead of being within the corners of the frame or ends of the rails which it supports," so that a line continued from the middle of a side rail would meet a similar line from an end rail "before reaching the centre of the pillar." Sometimes only one aperture is made in the lug, and the ends of the rails when united form one corner of the frame, and both drop into the same aperture.

[Printed, 8d. Drawing.]

A.D. 1860, June 15.—N° 1459.

DAVIES, GEORGE.—(*A communication from Louis Bauhoefer.*)—"An improved life-preserving mattress." The mattress is stuffed with cork cuttings or shavings; it is placed within an oblong frame composed of light laths, and it is confined at the ends and sides by an inner frame, and at the top and bottom by a network covered with oiled canvas or other waterproof material which is also wrapped round the frame. It is further secured by transverse and longitudinal ropes which pass through holes in the frame and are tied outside. Another rope passes entirely round the frame and is united to the other ropes at eight points, two at each end and side. At the side points are attached other ropes, each having at its outer end a cork float "of such a form and size that they can occupy a position under the mattress and within the frame when out of use."

[Printed, 8d. Drawing.]

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FURNITURE AND UPHOLSTERY.

A.D. 1860, June 15.—N° 1461.

WEST, JAMES.—“An improvement in the bowls or rollers of cases for furniture.” The improvement consists in the employment of vegetable ivory, “well known in commerce as corozo or corozo nuts,” for bowls or rollers. The nut, after being turned into the proper shape by ordinary means, is perforated, and a metal tube is passed through the hole; on each side of the bowl is fixed a metal disc or washer “by plugging or by the rivetted or expanded ends of the tube bearing upon the said washers;” and the nut on which the roller turns is passed through the tube and riveted to the horns. Sometimes the metal tube is dispensed with, and the discs or washers serve as bearings for the rod. If the nut is “split, cracked, or unsound,” in its interior, the unsound portion is removed, and a hard wood or other plug is fixed in by glue or other cement and perforated for the tube. The bowl or roller may be left “in its natural state, that is colorless, or be painted, colored, stained, or dyed, or otherwise ornamented.”

[Printed, 6d. Drawing.]

A.D. 1860, June 30.—N° 1583.

HAWKSEY, ANDREW.—“An improved method of drawing and withdrawing window curtains and other similar hangings.” In the cornice, or moulding, or pole from which the curtains hang, “a peculiarly shaped T groove” is formed, in the upper or horizontal part of which a number of rollers run. Each roller is furnished with a wire hook or eye for the attachment of the curtain. Suitably attached to the rollers are cords, by pulling which the curtains are drawn or opened. The rollers may be “used in pairs and in a vertical position, and the cords placed between them.”

[Printed, 10d. Drawing.]

A.D. 1860, July 2.—N° 1595.

GEDGE, WILLIAM EDWARD.—(*A communication from Vu Gille Marie Joseph Neveu-Derotrée and Arsène Charrier.*)—“Improvements in chairs and other articles of furniture to be principally at sea.” The whole apparatus is composed of an octagonal wooden case forming the base; three circles or

"concentric and situate on the same plane;" a rod on which is a balance weight; four branches bolted to the chair and fastened to and resting upon a ring; and an arm chair having a folding foot rest: the rings, &c. are of metal. The shape and material of the case may be varied, and it may be made to fold up. It "rises" vertically a certain distance from its base and thence tapers upwards, until the diameter of the ledge within its upper part is equal to that of the outer of the three circles which it supports." The inner circles have each two pivots "following a diameter of the circle to which they belong, and perpendicularly to those of the adjoining circle." "The circle described is a full one; it carries in the sense of its ante-posterior diameter two grooves, intended to receive two bolts fitting to the seat." The rod is fixed in the centre of the circle described; the weight consists of "eight partially cylindrical weights." The ring on which the branches rest is pierced with two holes "to receive the bolts which slide in the grooves."

[Printed, 8d. Drawing.]

A.D. 1860, July 9.—N° 1654.

PRITCHARD, WILLIAM HARPER.—"An improved apparatus for amusing and exercising children, and assisting them in learning to walk." The frame consists of eight metal legs supporting a tube; an inner tube, "free to rise and fall without revolving," serves as a bearing for a spindle which revolves only in one direction, a ratchet on the top of the inner tube and a click preventing its revolution in a contrary direction. The spindle carries a horizontal bar having at one end a padded ring and at the other an adjustable balance weight. The inner tube is raised or lowered by a screw which passes through a nut in the bottom of the outer tube. The ring is jointed and secured from opening by a sliding loop and spring. At one end of the bar a chair may be placed "fitted upon a central pin," whereon "it may be turned half round;" or a chair may be placed at each end. In this arrangement the spindle revolves in either direction, and attached to it are two bands passing over pulleys on brackets fixed to the inner tube. The bands are wound round the spindle in contrary directions, consequently, the descent of a weight hooked to the end of one winds up the other, and causes the spindle to revolve and with it the chair.

[Printed, 10d. Drawing.]

A.D. 1860, July 12.—N° 1681.

GRAHAM, PETER.—(*Provisional protection only.*)—"Improve-
ments in means or apparatus for operating roller blinds,"
especially such as are of considerable length. "My improve-
ments," says the patentee, "consist in substituting for cord
"tape or other band, having breadth adapted for the successive
"coils thereof to be formed one over the other, and to insure this
"correct action I apply a pulley or other suitable guide near the
"pulley or wharve, with another at a distance therefrom, accord-
"ing to the length of the blind, if desired."

[Printed, 4d. No Drawings.]

A.D. 1860, July 12.—N° 1683.

AYCKBOURN, FREDERICK.—"Improvements in tubular beds
"and bolsters." The bed case is of the ordinary material and
shape and divided either lengthwise or crosswise into separate
cells by strips of calico or other fabric sewn to the top and bottom.
The cells are left open at one end (or at both ends if preferred),
and a flap is sewn to the case so as to fold over the cells and fasten
securely underneath. A tube of vulcanized india-rubber cloth,
"a trifle larger in every way than the bed cell," closed at one end
and having an orifice at the other for the insertion of a metal
mount, is placed in each cell. The tubes may be inflated simul-
taneously by means of an india-rubber tube formed with a neck
and orifice and as many branches as there are cells. Pillows and
bolsters are made on the same principle.

[Printed, 4d. No Drawings.]

A.D. 1860, July 21.—N° 1767.

LAKE, WILLIAM.—(*Provisional protection only.*)—"An im-
proved button or fastening for iron bedsteads and other pur-
poses." An eccentric collar or shoulder is formed or applied
"between the pivot or pin and the overlapping flange or button
"of the fastening." Should the lath (through which the pin
the button is passed until the eccentric shoulder "is sunk i
"the hole") be loose, by turning the flange right or left t
"shoulder presses against the side of the hole cut through t
"lath, drawing the lath with it as it turns, thereby securing t
"tightening it as much as may be desired."

[Printed, 4d. No Drawings.]

A.D. 1860, July 27.—N° 1819.

GROSSETETE, CHARLES ARMAND.—(*Provisional protection only.*)—"An improved reversed conical non-swerving spring mat-trass." The springs, "conical shape," are placed in a "reversed position, viz., the small ends resting on the laths." The invention is applicable to "cushions and all articles in upholstery."

[Printed, 4d. No Drawings.]

A.D. 1860, August 7.—N° 1903.

HUDSON, FREDERIC.—"Improvements in spring rollers for "window blinds." A stationary spindle, squared at each end, "runs right through the barrel." Three blocks of wood, revolving freely on the spindle, are fixed inside the barrel, one at each end and one in the middle. A portion of the spindle on the right of the middle block is cut with a screw thread, and at each end of the thread is a stop. A rod, fastened to the middle and outer block, fits loosely in the slot of a nut which runs freely on the thread. An ordinary spiral spring is attached at one end to the spindle, and at the other to the left of the middle block. When the trigger is pulled the barrel revolves by the action of the spring until the nut comes in contact with the right hand stop, "which prevents the tension of the spring running down any further."

[Printed, 6d. Drawing.]

A.D. 1860, August 15.—N° 1972.

JENKINSON, WILLIAM, and SOLBÉ, ALFRED.—"Improvements in connections or joints of the posts and frames of bedsteads and iron houses." The ends of the rails terminate with a male dovetail "taper or wedge-shaped in its depth." The posts or bosses on the posts "have female dovetails recessed into them" of a greater depth and with the aperture "sufficiently large to allow the admission of the male dovetail."

[Printed, 6d. Drawing.]

A.D. 1860, August 24.—N° 2036.

KEEN, WILLIAM.—(*Provisional protection only.*)—"Improvements in castors." The castor is made "in two distinct portable parts," the socket or plate and the horn or wheel carriage, and

is so arranged "that the horn and its appurtenances may be removed at pleasure" without disturbing the socket or plate. The socket carries a spindle; these "may be cast or wrought together or separately of the same or different materials;" when they are made in separate portions, "the top part of the spindle may be turned to a shoulder passed through the plate or the bottom of the socket and rivetted or otherwise fixed thereto inside." The horn part is mounted and turns freely on the spindle, around which is a groove "to receive the ends of one or more set screws or cross pins, which are made to project through the side of the horn inwardly." It may be made in the ordinary way, "but by preference the hole in the body thereof is made only partially through, and is so finished that the bottom of the spindle may rest on and fit the bottom of the hole," which serves "as a reservoir for oil or other lubricating medium to prevent friction." One or more collars may be inserted between the socket or plate and the horn part, "and the top of the horn may be faced with antifrictional materials, and, if necessary, a small friction wheel may be mounted on the horn on which the bottom of the plate part will rest, and so equalize the bearing and relieve the spindle."

[Printed, 4d. No Drawings.]

A.D. 1860, September 4.—N^o 2130.

STEVENS, JAMES JOHN.—(*A communication from George Henry Faulkner.*)—"Improvements in iron bedsteads" which "will pack up into little space." The rails are of angle iron, the side rails being formed in two lengths and jointed so that one part may fold over the other. Tapped sockets are fixed to the under side of the frame for the reception of six legs. The head-piece terminates at bottom in two plugs which fit into the hollow legs at the head or into special sockets. The middle legs are connected by stays hooked to them, and the laths are usually fixed transversely. If longitudinal rails are used, they are jointed at or about the middle. In cots the middle legs are dispensed with.

[Printed, 10d. Drawing.]

A.D. 1860, September 15.—N^o 2240.

BURKE, MICHAEL.—"An improved spring sacking or foundation for a bed, mattress, or other like article, especially adapted

" for ships' use, barracks, hospitals, and military camps, applicable also for domestic dwellings." The side and end rails of wood are dovetailed together, the end rails being deeper than the others. On the end rails are bearing pieces in which recesses are cut, curved, and covered with cloth, leather, or other material. In the recesses the ends of laths " of elliptical shape as regards their " section " rest, and " are capable of moving sideways as well as " lengthways." The laths are kept in place by cap pieces. A head-board may be hinged to the head rail and kept upright by bolts. There may be numerous modifications of the above :—The recesses may be square or formed by pins " placed in holes in the " framing at suitable distances apart." The bearings may be curved or flat with feet; they may rest on helical or flat steel springs. The frames and bearings may be of iron, or the bearings alone of iron. The recesses may be made in the rails. The frame may be supported on corner legs or on cross legs. " A springing " action is obtained at the head and foot rails " by making them of corrugated iron and by supporting the frame on cross legs.

[Printed, 10d. Drawing.]

A.D. 1860, September 22.—N^o 2311.

WELLS, JOHN HOWELL.—"Improvements in rocking chairs." Two of the legs are placed " at the sides about midway from front " to back ;" the other two (which are hollow) " centrally at the " front and back of the seat respectively." The former are surmounted by metal caps, of which the tenons form a part; the tenons fit into mortises in the side rails, or into metal caps attached to them, and are secured by pins which pass through the tenons and form the axis on which the body of the chair vibrates. The rocking motion is regulated by coiled springs attached to the front and back and to the bottom of the hollow legs by metal fastenings which by preference are hinged to the body. " The front and back posts are cut away to allow the chair " to vibrate " within proper limits; the hinder leg is extended backward to give stability. To retain the chair at any inclination there is on the hinder leg a curved plate with holes in it, into any one of which a bolt attached to the seat or body can be slid.

[Printed, 6d. Drawing.]

A.D. 1860, September 22.—N° 2313.

GRIFFITHS, THOMAS.—(*Provisional protection only.*)—"A new "or improved pulley for window and other blinds," to be used "in place of the rack pulley." A vertical plate is fixed to the window frame; it carries two arms, the upper having a square or angular hole, the lower a circular one. "The lower bracket is split "or divided," and receives within the split part a milled head or disc with a wormed hole. A rod, having a square or angular shape at top and a screw at bottom, "is capable of rising and "falling" in the brackets. A pulley, under which the blind cord is passed, is mounted on the top of the rod, and both rod and pulley are raised or lowered by turning the milled head.

[Printed, 4d. No Drawings.]

A.D. 1860, October 4.—N° 2402.

KNIGHT, JOHN ADAMS.—(*A communication from John Mellier.*)—"A new or improved mode of inflating air mattresses and air "cushions." The mattress is made of india-rubber cloth or the like, and of such shape that when it is inflated "the head portion "forms a swelling or raised part, acting as a cushion." It is divided into two compartments; in the small one are placed two or more steel springs "which may be acted upon by pressure." Two valves, opening in contrary directions, are attached, one to the outer, and one to the inner face, that is, to the partition which divides the two compartments. The action is "similar to "that of a common pair of bellows." Small elastic bands, attached at suitable distances to the top and bottom of the mattress, facilitate the expulsion of air and keep the mattress level when inflated. The "collapsing action" is aided by transverse elastic bands which are fastened across the whole breadth of the mattress. A mattress for two persons is composed of two such mattresses, and a uniting compartment similarly furnished with two divisions, a spring, and valves. The patentee explains how such mattresses may be available for "camp and military "purposes."

[Printed, 6d. Drawing.]

A.D. 1860, October 15.—N° 2505.

BRENNAND, CABLE, and BRENNAND, JOHN.—(*Provisional protection only.*)—"Improvements in ornamenting lappets, petti-

"coats, window curtains, blinds, and similar articles." Instead of ornamenting these articles "with embroidery or openwork produced by the needle or machinery," the patentees propose "to print the design or ornament on the fabric by machine, so as to represent embroidery or openwork, the design or figures to be so shaded as to imitate the perforations in the fabric hitherto made by hand or machine."

[Printed, 4d. No Drawings.]

A.D. 1860, October 23.—N° 2586.

HEADLAM, THOMAS WILLIAM.—(*Provisional protection only.*)—"Improvements in stuffing chairs, couches, mattresses, pillows, and other such like purposes, especially adapted also for stuffing cabin furniture, and the seats and backs of public and private vehicles." The patentee proposes to employ india-rubber balls for the above purposes; these are placed between two thicknesses of canvas or ticking and secured in their places by a stitch or button between each.

[Printed, 4d. No Drawings.]

A.D. 1860, October 30.—N° 2658.

TRIBE, THOMAS.—(*Provisional protection only.*)—"Improvements in ships' berths, bedsteads, and sofas." The bottom part of these articles is arranged to accommodate itself to the rolling motion of the vessel by supporting the article at its ends on gimbals or pivots. The ends of a cot or berth must be rigid, and furnished with gimbals "placed on a level with the top and in a line with the centre of the said cot." The gimbals rest "in bearings or sockets fitted in the bulkheads of the cabins, and to prevent the said cot turning on its pivots when not required one or more bolts are fitted for holding it in a steady position." Sometimes to ease the motion fore and aft as the vessel pitches, the ends of the cot "press against springs with which it is furnished."

[Printed, 4d. No Drawings.]

A.D. 1860, November 3.—N° 2691. (* *)

VAN HINSBERGH, JEAN HUBERT MARIE.—(*Provisional protection only.*)—"Cleaning and preparing pork's wool, so as to

"give it the elasticity of horsehair and the flexibility of wool, for bedding, sofas, chairs, &c. &c."

The inventor says :—"To obtain those advantages I prepare the wool in the following manner :—1ly, I wash it well, and scour it if necessary; 2ly, I dry it; 3ly, I beat by the process now in use, or I card it; 4ly, I spin it just as the curled horsehair; 5ly, I turn it till it obtains a tortuous shape similar to a corkscrew, or the same as the curled horsehair; 6ly, I boil it for an hour or two either in pure or slightly alumed water; 7ly, I dry it, either in the air or by the apparatus, according to season."

The inventor states that he means by "pork's wool" "the down that certain porks of the northern countries possesses;" and that this "pork's wool can be dyed every shade by the process now in use."

[Printed, 4d. No Drawings.]

A.D. 1860, November 7.—N^o 2742.

SEDLEY, ANGELO JAMES.—"Improvements in chairs, sofas, and other articles of furniture used to sit or recline upon." The patentee describes the construction of, 1, a metal folding chair; 2, a wooden chair; 3, a sofa; 4, a bed. 1. The legs are the ordinary cross frames with pin joints and stops. On the bar connecting the upper ends of one leg frame are two rollers on which the seat frame is supported and moved. On the sides of the back frame are studs which are received into the forked ends of the other leg frame and are retained therein by hooked catches. Or the back and seat frames may be pin-jointed together. A lever rack and stud near the front of the chair, by preference on the right side, regulate the inclination of the back. 2. The legs and the seat frame, the back parts of which "rise some height above the side rails," are fixed together; the raised parts are connected by a bar. If elbows are required, they are "formed with and form part of the seat frame." On the back frame are two axes which turn in bearings on the raised parts. The seat and back frame are hinged together, and rollers, rack, and stud are placed and act as in the folding chair. 3. The elbow frame is supported on axes "on raised ends or stumps on the end of the back and front rail." The seat frame is supported on rollers "which move on axes affixed to the frame of the sofa, near the opposite end to that at which the elbow is applied." The under surfaces of the back and front rails of the seat, when

they rest on the rollers, "should have a slight inclination." There is a rack applied as in the chairs, and to prevent the seat from rising when the elbow is inclined, the ends of the elbow have projecting pins "which enter vertical slots fixed on the back "and front rail" and push the seat away instead of raising it. 4. "The head frame is connected to the stuffed part of the "bed" and supported on axes on stumps at the head of the bedstead. The foot end of the stuffed frame rests on rollers, and the rack is placed near the head of the bedstead.

[Printed, 1s. Drawings.]

A.D. 1860, November 29.—N^o 2932.

OFFORD, ROBERT, junior.—"Improvements in the adaptation "of india-rubber and compounds thereof to wheels." The patentee adapts india-rubber as tyres to wheels, and, secondly, he makes castor wheels of india-rubber with or without metal centres. Two kinds of rubber are employed, the hard for the inner coat, the soft for the outer one. The two "are chemically and firmly "attached to each other during the process of vulcanizing." For wood wheels with iron tyres the outer surface of the iron and the inner surface of the hard rubber "should be accurately fitted, so "as to drive on pretty tight," additional fastenings being employed of bolts, screws, and nuts. If the wheel is made wholly of metal, the patentee prefers "to vulcanize such tyres at once on "to the wheel itself, using metal bolts or projections when necessary to render the fixing additionally secure." For cast-iron truck wheels "the hard rubber or vulcanite forms the first covering next to the iron." This will take firm hold of the metal surface, but he prefers "a groove or rib in the casting as an "additional security." The elastic or outer surface is then added and caused to adhere to the other. Castor wheels are made of hard rubber (moulded or otherwise) with or without a metal bush, and with an external surface of elastic rubber chemically united as before described; or they may be made "in tubes of convenient "length cut off to the required thickness in a lathe."

[Printed, 8d. Drawing.]

A.D. 1860, December 11.—N^o 3041.

TUCKER, HIRAM.—"Improvements in bedsteads," whereby "an elastic foundation or surface to receive a mattress" is obtained. Wooden laths slightly curved extend from the head to

the foot rail; each is attached to the foot rail by a notch in its upper surface, "where it comes under the staple," and to the head rail by a hook-formed end which enters the staple, admitting "of longitudinal play at that end of the lath." A cross rail is fastened to the side rails nearer to the foot than the head rail, and its upper edge "is rather higher than the point at which the foot ends of the laths are held." For greater elasticity a spring may be employed to connect each lath with the head rail. The laths may be curved by steaming or by means of a stout wire, but, says the patentee, "the manner of giving curvature to the laths forms no part of my invention."

[Printed, 6d. Drawing.]

A.D. 1860, December 18.—N° 3106.

PRESTON, THOMAS LOVELL, and LLOYD, THOMAS.—"Improvements in the manufacture of metallic bedsteads, chairs, and couches, and other articles of like manufacture." On two of the vertical sides of each corner block is cast a disc with a tongue on its lower edge. The edge of the disc is slightly conical, and the disc and tongue stand out from the sides of the block from a quarter to half an inch. Projecting from the face of each disc, "but by preference not concentric therewith," is a screwed pin. On the end of each rail is cast a block with recesses, the counterpart of the disc and tongue, and with a hole for the passage of the pin. When the parts are put together, the pin is secured by a nut. The position of the parts may be reversed, in which case the pins are passed through the pillar block and secured by nuts on the other side. Another part of the invention relates to connecting the horizontal rods of tester frames and head and foot pieces to pillars. In the top of each pillar a hole is pierced, or, if the pillar is hollow, a smaller tube is introduced into it. On the ends of the rods pins are fixed which fit into the holes or smaller tubes.

[Printed, 8d. Drawing.]

A.D. 1860, December 22.—N° 3146.

COOK, EDWARD, and STOKES, JAMES.—"Improvements in sacking and joints for bedsteads." The side and head rails are united to the posts by dovetails of the ordinary form, except that *they* are not taper, and their "position is changed from perpendicular to horizontal." The foot rail is connected to the posts

by a "sliding joint" at each end, which admits of its being moved outwards by a screw so as to tighten the sacking. The tightening is increased by a stretcher between the sides. The sacking is made with a loop or hem which slides over the rails. Any kind of sacking, laths, or supports for mattresses may be tightened by this invention.

[Printed, &c. Drawing.]

A.D. 1860, December 27.—N° 3176.

NEWTON, ALFRED VINCENT.—(*A communication from Tyler Howe.*)—"An improvement in the construction of bedsteads," whereby the bottoms are rendered elastic, and the tendency of the laths to sink in the middle is removed. Two pieces of spring metal, slightly curved and about thirty inches long, are applied to the under side of each lath, in such a position that the inner ends of both "pass across the centre of the lath." The inner ends are nailed or riveted to the lath with the convex sides against it; the outer ends are held by staples. "Rocker pivots" formed of wire are passed through holes made laterally in the laths; their ends are bent down at right angles and enter tapered holes bored in two cross bars.

[Printed, &c. Drawing.]

A.D. 1860, December 29.—N° 3186.

CLARK, WILLIAM.—(*A communication from Michel Antoine Graziani.*)—"An improved tissue fabric or structure" for blinds, curtains, floor coverings, screens, &c. The fabric is composed of a web of rigid strips. These may be of wood, cane, reed, cord, wool, or other material "suitably stiffened." The warp is of cord, wire, or other flexible substance, "so as to permit of rolling "up the fabric the same as a piece of cloth."

[Printed, &c. Drawing.]

1861.

A.D. 1861, January 5.—N° 38.

ROBERTS, JOHN.—(*Provisional protection only.*)—"An improved warming hassock or footstool," consisting of a water-tight vessel "of zinc" of any shape, and covered with a felt or

other covering. It rests on a rim, within which is "an inner support." Within the vessel is a support to prevent the top from buckling under the pressure of the foot. The aperture for pouring in hot water is closed by a screw plug. At the sides are hinged or moveable lugs covered with wood, or other non-conductor of heat. If the footstool is for use under a writing table, the top is made slanting.

[Printed, 4d. No Drawings.]

A.D. 1861, January 5.—N^o 40.

LUCK, WILLIAM.—"An improved table or article of furniture," opening out into a bagatelle board. The frame, which stands on two legs, supports "a sort of oblong tray, having three upright sides," and forming one half of the bagatelle board. Cross bars are screwed to the tray, one at each end; and to each bar is fixed a vertical bar, which slides up and down in a mortise in each leg and rests on a spring therein. The table top, having its under surface fitted up as the other half of the board, is hinged to the ends of the sides of the tray; when it is lifted the tray rises, and when it is turned back it rests on a telescopic slide to which a folding leg is hinged. For adjusting the level the feet of the legs are "balls with threaded shanks," and a screw in the framing abuts at top against the under surface of the tray. The top and tray may be fitted up for other purposes."

[Printed, 10d. Drawing.]

A.D. 1861, January 15.—N^o 112.

STEVENS, CHARLES.—(*A communication from Mr. Loyer.*)—"A new paste made from wood to be used in the manufacture of various articles, together with the apparatus employed in the preparation of the same." Among the articles mentioned are "ornamental and other mouldings, furniture and imitation wood carving, panels for paintings, frames for looking-glasses pictures, and engravings." The preferable woods are woods, such as poplar, lime, birch, or fir; these are first reduced to shavings "sufficiently fine to be acted on with ease by caustic solution, in which they are boiled long enough to effect the separation of the fibres." When sufficiently broken "the fibrous matter is withdrawn and subjected for several days to fermentation for the purpose of softening and rendering

“supple; this is effected by exposing the lignum in a mass to the air and watering it each day sufficiently to prevent its becoming dry on the outer surface.” It is now subjected to the action of a machine composed of, 1, a cylinder of cast iron or other suitable material, on which steel blades are fixed at equal distances, and “shaped so as to slope on one side;” 2, a steel block “cut so as to form blades having a sharp edge on their upper surface and sloping on each side;” this block is placed in a receptacle “in an oblique position to the axis of the cylinder,” so that the contact between the blades “takes place only at one part.” Various modifications “may be introduced in the arrangement of the apparatus.” By means of this machine “the fibres of the wood are completely separated and form in a short time a fine paste.” Various roots can be used; they “are first bruised and then boiled in caustic lye, and treated in the same manner as the lignum;” but all knotty or defective parts must be removed before subjecting them to the action of the cylinder. Tan, either new or old, may be employed, but it must first be sifted, and all pieces too thick must be reduced in size. By mixing the paste with earthy matters, and subjecting it to a rolling and pressing machine, it “becomes admirably adapted for floorings.” Again, on being pressed and rolled to a suitable thickness the paste may “replace zinc and other materials employed at present for roofing.”

[Printed, 6d. Drawing.]

A.D. 1861, January 22.—No 174.

COTTAM, HENRY RICHARD. — “Improvements in folding chairs, cots, and such like articles to sit and recline on.” First, the construction of a metal chair which is convertible into a cot:—The back, arms, and legs are permanently fixed together; the seat frame is jointed to a horizontal bar on the back; the arms are connected in front by a bar “passing from one leg to the other underneath the seat.” The folding portion consists of a frame fixed to a rotating bar on the front of the chair on a level with the seat; this frame is provided with folding legs and three frames, which when the chair is extended form the sides and end of the cot, and, when the frame is folded under the seat, “are on the under part” of the frame. Second, the extending of a folding chair from one of its sides:—A folding frame is hinged to one of the side rails; this frame consists of two parts hinged so

as to fold one on the other ; an elbow and legs are applied to the outer part, and when the chair is folded " the legs on the folding " side thereof will appear as nearly as may be like the legs on the " other side of the chair." Or the folding frame may consist of one part only ; it has folding legs, a back, which when the frame is folded under the seat descends below, and " two raised projections in opposite directions, suitable to act as arms," one when the parts are folded, the other when they are extended.

[Printed, 8d. Drawing.]

A.D. 1861, January 25.—N° 202.

NEEDHAM, SAMUEL.—" Improved spring apparatus applicable " to bedsteads and other articles to which springs may be applied." For a bed bottom ten cross and two longitudinal laths are used. Each cross lath is a spring having a curve of from two to two and a half inches in the middle ; at each end is hinged a metal plate " having a slot cut therein of sufficient length to " allow the spring to play." The plates are screwed through the slots to the side rails. Before fastening the plates (to prevent lateral shifting) a lath countersunk at proper distances is placed upon the plates, so that the heads of the screws present an even surface. The longitudinal laths are placed one above and one below the middle of the cross laths ; they are secured by screws " passing through packing pieces " somewhat thicker than the cross laths. Low-priced bedsteads may be made " with the ends " of the spring laths curved sharply and working in a sunk or " raised groove." In easy chairs the spring laths are laid lengthways and the cross laths may be dispensed with. A spring may be applied to each arm.

[Printed, 10d. Drawings.]

A.D. 1861, January 28.—N° 217.

CLARK, JAMES.—(*A communication from Aloise Edyt Miller.* " The application of a paste of whatever wood to any kind " ornamental and other mouldings, without the least admixture " of any other materials, or use of any chemical agent." " The paste or pulp, which is applicable to all kinds of wooden ornaments, to the decoration of articles of furniture, to picture looking glass, and other frames, " is obtained by grinding

" kind of wood on vertical or horizontal grindstones, or by any other mechanical means (proceeding) under a constant admission of a small quantity of water." After the grinding the pulp is placed in "a coarse linen or a fine wire cloth, so that the surplus water may run off, and then into a press to undergo a slight pressure." It is next put "under a vertical crushing stone to be ground," and afterwards "trituated and kneaded," when it is ready to be placed in a mould. For sake of economy "a mixture of plaster, of china clay, or of other substances of a similar nature," may be introduced. The patentee describes the moulds which he uses, but adds, "that the process of fabrication, as also its manipulation, presents nothing new; therefore I do not patent any particular or peculiar process."

[Printed, 4d. No Drawings.]

A.D. 1861, February 13.—Nº 371.

HENRY, MICHAEL. — (*A communication from Jean Baptiste Germain Clergeau.*)—(*Provisional protection only.*)—"Improvements in the construction of a certain description of castor, and in apparatus for manufacturing certain parts of such castors, which apparatus may also be applied for producing rounded bodies for other purposes." This invention relates "to improvements in the construction of castors, for which J. Felix obtained a patent, dated 9th November 1858, and also to machinery for manufacturing the smaller balls employed therein." The disc or knob, "intended for the recess containing the small balls, is at the end of a rod or stem connecting the castor cup to the piece of furniture or other article to which the castor belongs, such disc or knob being cast or forming a single piece with or being a portion of such rod or stem; the latter has a collar cast or formed on it; the inverted cup which can be cast in a single piece is turned smooth at the recess" and is constructed with a shoulder at the upper opening. The neck is turned true, "so that the rod or bar may be readily fitted in place by placing the disc or knob (which is turned smooth) into the upper recess, where space is left for the smaller balls, the collar resting exactly on the shoulder. The top edges of the cup are turned over the top of the collar. The lower edges of the cup are formed somewhat open or widened out to allow the large ball to be inserted and are bent or forced inward to retain the

"ball (a little below its centre), but yet allow it the necessary freedom." For manufacturing the small balls "the metal is first subjected to apparatus to be roughly shaped out and cut, and then to apparatus for being rounded, smoothed, or finished off." Each apparatus is described, and the patentee adds that "the apparatuses may also be adapted or applied for producing rounded bodies or objects for other useful purposes." The principal parts are, 1, a lever, "worked to and fro by an excentric or crank motion from the driving shaft;" 2, a pair of dies or punches "which are caused to slide to and fro or advance and recede alternately by a pair of arms or levers worked by excentrics, cams, or crank action from the driving shaft;" 3, a cutter "worked up and down by the lever driven by two teeth or projections on a boss or collar on the driving shaft;" 4, "apparatus in which are two plates or discs, one stationary and one revolving;" on the surface of the former nearest to the latter "a spiral is cut or formed corresponding at the side or edge part to half the circumference of the ball." The rough ball drops on to the revolving plate "through a central feed sieve or hopper," and is driven by it "all along the spiral, running right through it from beginning to end, and is finally projected in a finished state into a conveniently placed receiver."

[Printed, 4d. No Drawings.]

A.D. 1861, February 19.—N^o 413.

BURCHELL, RICHARD BUSH.—(*Provisional protection only.*)—"An improvement in tighteners for the cords of curtains." A rod, at one end of which the pulley for the cord is fixed, passes through an eye screwed to the window casing. The rod "is confined within the eye," and, when it has been drawn through sufficiently to tighten the cord, "the eye and rod are held together" by a pawl or pawls, "fitted between the two parts" that constitute the eye, and taking into notches in the rod.

[Printed, 4d. No Drawings.]

A.D. 1861, February 22.—N^o 445.

HATCHWELL, HENRY, and HATCHWELL, SAMUEL BAXFILL.—"An improvement in stools or seats," which are so constructed "that they may be used for sitting or kneeling upon on one side, and for resting the feet upon on the other." The seat

side is stuffed and covered; the other is left bare or is covered simply with carpet or oil-cloth. This stool or seat is mounted on axles in side frames; it turns in one direction only, and is stopped and prevented from turning back by spring clips, "which are bevelled on one side to allow of their moving in one direction, and flat on the other to allow of their resting on ledges formed in the side frames." The stool or seat may be made with three, four, or more sides."

[Printed, 6d. Drawing.]

A.D. 1861, February 26.—N^o 490. (* *)

DAVIES, GEORGE.—(*A communication from Charles Augustin de Beriot.*)—"Improvements in mechanical beds for invalids, applicable also to tables for anatomical or surgical operations." These are as follows:—"The bedstead is divided into three distinct parts," namely, "a fixed or immoveable part at the centre and a moveable part at each end, which latter parts are moved simultaneously by a lever, the part at the head rising and the part at the foot lowering, and vice versa. When it is desirable to fix the bed in any position assumed by the invalid, this is done by means of a cord fixed to the head of the bed passing over a pulley, and furnished with several rings, one of which is hooked on to a fixed point." The two moving parts of the frame are connected together by levers, "so that they shall balance each other and move simultaneously when the cord is pulled, and in providing the levers connected to the foot piece with hinges, so that, when desired, the foot piece can by slight pressure be inclined without raising the head or body."

A modification of the same arrangement is "applicable to operating tables for surgical or anatomical purposes."

[Printed, 10d. Drawing.]

A.D. 1861, March 7.—N^o 578.

KENNEDY, WILLIAM SADLER.—"An improved method of and apparatus for imparting the motion of riding to wooden or metal horses, part of which is applicable to cradles and other similar appliances." The horse stands on a pedestal of convenient depth; the portions on which the feet rest are detached and fixed to springs, by preference coiled springs, which are secured to the bottom of the pedestal. The action of the horse

is assisted by a standard (on each side of the stationary part of the pedestal) on which the rider places his foot at pleasure. The springs may be placed in the body of the horse and rest on a platform which is supported on uprights from a base. Other modifications of the position of the springs are shewn in the drawings. Castors are attached to the pedestals or bases. The springs may be placed under a cradle; they may rest on or form part of the legs of a cot.

[Printed, 1s. Drawings.]

A.D. 1861, March 27.—N^o 767.

ABEL, CHARLES DENTON.—(*A communication from Emmanuel Guyennet.*)—(*Provisional protection only.*)—"Improvements in "the construction of wardrobes," so that "the object for which "they are employed cannot be known without previous knowledge." A frame is fixed against a wall; to this frame another, "filled in with a picture," is hinged so as to form a door to the wardrobe and a frame to the picture. In the first frame are placed upright spindles having arms attached to them at right angles; the spindles turn in sockets at the bottom of the frame and are attached to the top of it by coiled springs, which, when the door is opened, cause the spindles to move round until the arms stand out.

[Printed, 4d. No Drawings.]

A.D. 1861, April 1.—N^o 801.

DE SANGES, SEYMOUR.—(*Provisional protection only.*)—"Improvements in mattresses, cushions, and such like articles," designed more particularly "for the use of children, invalids, and "persons who are bedridden." The articles are made with openings "through, across, or along them, said holes in all cases "extending from the top side." The case is waterproof, and the openings are of metal tubing, india-rubber, or other suitable material.

[Printed, 4d. No Drawings.]

A.D. 1861, April 5.—N^o 847.

HUTSON, JOHN.—"Improvements in the manufacture of the "posts and joints or connections of bedsteads, and other articles "of furniture." Each post and each leg is a tube of sheet iron

having a flange brazed on to one end. The connecting boss is a short wrought iron cylinder, "the interior of which is intersected by a plate (less in depth than the said cylinder) placed vertically across it and brazed in that position." On the top and bottom of the plate is brazed a flat ring. The flanged ends of the tubes forming a post and leg are fitted within the ends of the boss and fixed therein "by rivetting over the ends of the said boss on to the edge of the flanges." Apertures are cut in the boss to admit the tapered ends of the rails, which abut against the intersecting plate and are secured by projections on their under sides and by wedges.

[Printed, 10*l*. Drawing.]

A.D. 1861, April 11.—N^o 896.

SMITH, RICHARD.—(*Provisional protection only.*)—"Improve-ments in roller blind apparatus." This invention "relates to keeping in tension the cords of roller blinds," and consists "in the application of a system of pulley blocks, or their equivalents, operated on by a weight for that purpose." The lower pulley and its frame (without a rack) are suspended "in the double of the blind cord." The frame is formed to receive one, two, or more pulleys in addition to the endless cord pulley, "and at a somewhat lower elevation." To the framing of the window "a duplicate pulley frame" is fixed, with one, two, or more pulleys fitted therein, "to correspond with the extra pulleys of the upper one." This second pulley frame "is disposed about two inches below that depending from the endless cord." The end of a cord, gut, or chain is attached to the upper frame and passed thence "round the under side of the upper pulley in a fixed frame or bracket, then up over the lower pulley in the pendent frame, and down again under the lower pulley of the fixed frame, and up over the upper pulley of the pendent frame, in the manner of pulley blocks; the free end of the cord or chain is then pendent and has a suitable weight attached to it in the form of a tassel or other pendent ornament." The power of the weight exerts a constant power to pull down and tighten the endless blind cord, which is at the same time free to rise and fall according to the expansion and contraction of that cord." Instead of pulleys "hard fixed surfaces of iron, glass, or other material may be used for the weight cord to turn upon."

[Printed, 4*l*. No Drawings.]

A.D. 1861, April 20.—N° 978.

WHITEHOUSE, JOHN.—“Improvements in the manufacture of door and other knobs, and the ornaments of the pillars of metallic bedsteads, and other articles of like manufacture.” The knobs described are, first, such as have necks, “of an internal core or foundation of cast or malleable cast-iron or other hard and cheap metal or alloy,” and neck casings of thin sheet brass or “other ductile metal or alloy.”—After the casting of the core a groove is turned in its upper edge; the casing is formed “by raising a disc of sheet brass by means of dies or raising tools into a cup-like form;” it is placed upon the core and closed upon it “by the process called spinning,” and afterwards “perforated in its middle for the purpose of forming the hole for the spindle.” The body and neck are connected “by forcing the edge of the said body into the groove in the neck” by means of a pressing tool. The side of the neck is tapped “for the screw to engage in, by which the spindle of the knob is secured.” Secondly, “such knobs as have bodies of china and metallic necks.”—If the neck is of the kind just described, a groove is “made at the side of the square hole in the axis of the neck,” and the upper part of the core has projections on it, which occupy part of the recess formed in the china body. A temporary spindle is passed through the neck into the recess, and “melted type metal, lead, or other easily fused and cheap metal or alloy,” is poured in through the groove. After the metal has solidified, the spindle is withdrawn, and the knob is finished in the ordinary way. Sometimes the core is omitted, and a thin shell of brass, “having a square opening and groove in its axis,” serves for a neck and is attached to the body in a similar manner. Terminal ornaments for pillars of metallic bedsteads, &c. are manufactured on a like principle; “the necks or the upper and lower parts of such of the said ornaments as are fixed on the summits of the pillars” consist of a core of cast or malleable cast-iron, &c. covered with a thin shell of brass. The middle part or body is made “of a tubular piece of metal, the upper and lower ends of which are respectively closed upon the top ornament and the neck” by means of a pair of dies. A description of the manufacture of variously shaped ornaments will be found in the Specification.

[Printed, 8d. Drawing.]

A.D. 1861, April 22.—N^o 993.

BOURNE, EDWARD DOUGLAS, and DAVIS, PAUL.—“Improvements in certain kinds of cornice poles and curtain rods, and in the runners used in cornice poles and curtain rods, and in the manufacture of tubing to be made into the said cornice poles and curtain rods.” A “small slit tube” is either made in one piece with a larger slit tube or fastened to it by brazing or soldering, “the said small tube being cylindrical in figure, and the large tube being either cylindrical or semi-cylindrical, or of the figure of a part of a cylinder greater or less than a semi-cylinder.” The larger tube may have “the figure of a reeded tube,” and the small one may form “one of the flutes.” There is a drawing of each variety of shape. The runners also are cylindrical or semi-cylindrical. A tube is wrought into the shape required by means of a mandril “having on one side and running its whole length a semi-cylindrical trough or depression,” a rod or tool which forces one part of the tube into the trough, and draw plates; the process is described. The patentees also make “curtain laths of a small cylindrical slit tube attached to a lath of wood.”

[Printed, 8d. Drawing.]

A.D. 1861, April 27.—N^o 1067.

STORY, GEORGE MARVIN, and EDWARDS, GEORGE WILLIAM.—“Improvements in billiard tables,” whereby they are convertible into dining tables. The frame is telescopic; the side pieces are prevented from “spreading laterally and separating” by angle metal pieces screwed to the under side of one portion and “turned upwards to enter a groove in another adjacent portion.” The frame is expanded and contracted by means of a screw. The top is made in two parts hinged together; the under side of one part is made suitable to form the top of a dining table; the under side of the other part is connected to the frame on each side by two links, all of equal length, which are pin-jointed at top to blocks and at bottom to the frame or to axes turning in bearings. The top is raised by aid of a telescopic rod, which has one extremity pin-jointed to arms on the axes, and the other hooked on to the end of an arm turning on an axis whereto a support is fixed. The rod “comes to its full length before the expansion of the frame is complete,” and it then begins to raise the support

ready for the folding part of the top. When the support is vertical, its axis is stopped by a hook and stud. As the expansion continues, the rod imparts motion to the links and raises the top. An end piece which serves as a marking board is fixed by catches to the end of the top when folded. Some tables are made without an expanding frame or folding top, but capable of being raised by a slight modification of the aforesaid mechanism. "To level the table accurately, screws are arranged in each of the legs."

[Printed, 1s. 6d. Drawings.]

A.D. 1861, May 8.—N° 1165.

FITTER, JOSEPH.—"A new or improved table expander." A screw, having a slot on opposite sides running its whole length, turns in a plate fixed to one end of the table. The screw works in a slotted double-threaded hollow screw provided inside with feathers which take into the slots of the screw. The hollow screw enters one end of a tube furnished also with feathers which engage in the slots of the hollow screw and cause the tube to rotate. Fixed to the other end of the table is a screw working in a similar hollow screw (without feathers) which enters the other end of the tube which is provided with feathers. The diameter of the first mentioned hollow screw is less than that of the last, so that it can enter and occupy the interior thereof. The patentee details the brackets, screw boxes, &c. which he employs in carrying out his invention, and the parts which may be omitted when only "a small amount of expansion is required in the table."

[Printed, 8d. Drawing.]

A.D. 1861, May 8.—N° 1168.

HOSKINS, EBENEZER.—"An improvement in joints for articles in metal." A slot, "the outer end of which is sunk," is cut through a pillar or other article, and a tongue, consisting of a button and spindle, projects from the end of a rail or other article which is to be connected to the pillar. When the tongue is passed through the slot, a half turn of the button securely joins the parts; "the sunken portion allows the button to lie flush or nearly so with the face of the pillar," and the sides of the mouth of the slot are by preference inclined, so that the turn of the

button tightens the joint. "When the joint is applied to a four-post bedstead, there will be two holes through the pillar for the end and side rails, arranged in such manner that when put together the parts lie level with one another." A similar joint is applicable to "the supports in the middle of a bedstead."

[Printed, 6d. Drawing.]

A.D. 1861, May 17.—N° 1260.

PITTS, SAMUEL.—"Improvements in billiard and bagatelle tables," whereby they can be readily converted into dining or ordinary tables. Hinges or other suitable contrivances are applied to the cushion frames, "so that they can be turned down under the table or taken off." When they are turned up "the corners are secured together by means of extra corner pieces furnished with studs which drop into openings or slotted plates on the ends of the cushion frames," or they may be fixed "by screws, levers, or brackets." The tables may have pockets attached to them by thumbscrews.

[Printed, 6d. Drawing.]

A.D. 1861, May 18.—N° 1270.

NEVILL, GEORGE.—"Improvements in the construction of the sacking of bedsteads and couches and other like articles." Two different sorts of sacking are described; the first consists merely of laths fixed to the head and foot rails without any cross rails. The second is composed of two or three bars secured to the head and foot rails, and on each side of each bar "a rectangular flap" turning on the bar as an axis. At each end of the flaps is placed a small arm turning on a joint on the rail; by means of these arms the flaps "will be supported in a more or less raised position." Buttons or other contrivances may be substituted for the arms.

[Printed, 8d. Drawing.]

A.D. 1861, June 1.—N° 1370.

BURKE, MICHAEL.—"Improvements in the manufacture of folding metallic chairs, bedsteads, and sofas, and other articles for sitting, lying, or reclining upon, a part of which improvements may also be applied to other articles of metallic furniture." The framing is of angle iron. In a folding chair the legs and back are jointed to the seat frame; the arms are formed

of a table may be equally expanded by one movement. A tube is "applied at about midway of the length" of the table frame, and rotatory motion is communicated to it by cog wheels, shaft, and handle. At each end of the tube is a screw nut which receives a threaded tube; on the outer end of each of these is a screw nut for the reception of another threaded tube or screw having at its outer end a plate which is fixed to an end rail of the table. The tubes may be made to meet in the middle tube or to pass one into the other. In a modification, one plate is fixed to the outer end of a double-threaded screw which enters a threaded tube; this is received into an outer tube to the end of which the other plate is fixed. The inner tube is the one to which rotatory motion is first imparted by means of a key and a square shaft passing through a socket on the end of the tube. As it is turned, it causes the outer tube and the screw to be "moved outwards from its two ends;" this is accomplished by means of two screw nuts, one fixed "interior of the end" of the outer tube, the other interior of the inner tube.

[Printed, 1s. Drawings.]

A.D. 1861, June 7.—N^o 1444.

LEELAND, JOHN.—(*Provisional protection only*).—"An improvement or improvements in the sacking of bedsteads and "couches, and other articles used for sitting, lying, or reclining upon." Metal laths extend from one side rail to the other "without being crossed by other laths." Each lath has "a nearly semi-tubular" form; the convex side is placed uppermost, and underneath each is fixed a thin bar, one edge of which is "placed in contact with the concave surface of the lath, and rivetted thereto." Portions are cut away from each end of the laths to permit of their resting on the top of the side rails and "engaging between the opposite edges" thereof. Lateral motion is prevented in the following manner:—Along the top of the side rails are "semi-tubular plates;" pieces are cut out from them at the required distances, and the ends of the laths pass through the openings thus made.

[Printed, 4d. No Drawings.]

A.D. 1861, June 15.—N^o 1537.

BARNWELL, STEPHEN.—(*Provisional protection only*).—"An improvement or improvements in the manufacture of up-

"holsterers' fringes." The only description of this invention is that it "consists in manufacturing fringes for upholstery of chenille, either plain and by itself, or variegated or mixed, or powdered with buttons or drops of plain silk, or trimmed with bullion tips and hangers, by which a rich and ornamental fringe for window cornices and other upholstery purposes may be produced."

[Printed, 4d. No Drawings.]

A.D. 1861, June 20.—N° 1587.

LAWFORD, HENRY.—"Improvements in folding chairs, folding beds, folding arm-chair beds, folding couch beds, and other articles for sitting, reclining, and lying upon." The articles are constructed so that they may fold into a small space without sacrificing strength; they are all supported on cross legs which are kept in position by folding stretchers. The back of a chair and of a couch bed is joined on "with a stop joint cranked." At the top is a folding rail. The arms of a chair are pin-jointed in front to uprights which are pivoted to one cross leg and stopped by its fellow; they are slotted behind to slide on bolts on the back, and notched on the top side to regulate the incline by aid of pins or catches. The incline of the couch bed is regulated by a rack. By attaching a leg rest the chair is convertible into a bedstead. The frame of an ottoman may be used as a tray stand:—"The reverse of the seat made of strips joined together to roll" forms a table top. Three frames, the head and foot folding "from inward outward," supported on cross legs and stopped "at all points by the cross movement stretchers," constitute a bedstead. The mattress slips over the bedstead and is "strapped on, buttoned, or hooked." This bedstead is convertible into a table frame, the joints being strengthened by clips, and the height regulated by stops. A folding top is used therewith.

[Printed, 8d. Drawing.]

A.D. 1861, June 20.—N° 1594.

BARTHOLF, JOHN HENRY.—(*A communication from George Boss Hartson.—(Provisional protection only.)*)—"Improvements in the construction of children's nursery chairs, and in apparatus for use in combination with the same." The chair consists of a framing, with four upright standards supporting a table

(round the sides of which are curtains) and fitted with low sides; the back is hinged and adjustable, and in front is an adjustable footboard. A moveable play table is added. Combined with the following apparatus it can be used as a baby jumper:—A circular base on castors carries a standard for supporting the “fulcrum of an oscillating lever” one end of which overhanging the base supports the chair “hanging in suspension.” The lever is horizontal, and the weight thereon is counterbalanced by a tension spring connected at one end to a bar projecting from the base and at the other to a strap hanging from the lever. From the unloaded end hangs a cord fastened to a pedal. A low-sided carriage of a shape to contain the chair forms therewith a perambulator.

[Printed, 4d. No Drawings.]

A.D. 1861, June 27.—N^o 1648.

HENRY, MICHAEL.—(*A communication from Jean Baptiste Germain Clergeau.*)—“Improvements in the construction of a certain description of castor, and in apparatus for manufacturing certain parts of such castors, which apparatus may also be applied for producing rounded bodies for other purposes.” The reader will find a description of this improvement on the “Felix castor” in Abridgment 371, dated February 13th, 1861. In this Specification the patentee describes more fully the parts and the working of “the two machines employed in manufacturing the smaller balls used in the castors,” the first for roughly shaping and cutting out, the second for finishing off. A driving shaft is supported in “plummer blocks;” it carries a fly wheel and “fast and loose” pulleys. On one end of it is fixed a crank disc connected by an arm to a lever, “to which it thus communicates horizontal, reciprocating, or to-and-fro motion.” Two cams, keyed on the shaft between the blocks, are connected to levers centred on pivots; they work these levers horizontally and thereby communicate to-and-fro motion to a pair of sliding die stocks to which dies are fixed. On the middle of the shaft is a collar; on this are two teeth or studs giving up-and-down motion to a lever to which a cutter is screwed. The wire to be cut into balls “is gradually delivered off a reel and conducted to the machine;” it is led first to the lever connected to the crank, in passing which it is nipped by a “jointed knee piece,” then through a guide (where it is held by a burin) between the dies.

These in their advance stroke "act on the wire and shape it;" when they recede they release the wire, which is gently driven by the lever beneath the cutter. The cutter is so actuated by the studs "that it comes down on the wire with two brisk strokes, "one close after the other, so as to cut the wire on each side of "each rough blank or spherical shape." The rough balls "fall "through an orifice into a receiver fixed below;" they are then "separated by a riddle or screen, or by other means, and are fed "into the second machine." Here a horizontal shaft, supported in bearings in frame standards, carries fast and loose pulleys. From this rotatory motion is transmitted through bevil toothed gearing to an upright shaft, and thence "to a plate, disc, round "stone, or wheel," which is attached to it. A stationary plate, disc, or stone is fixed to the cross bars of the framework; on its under surface is cut a groove "winding spirally from the centre "of the disc to its edge," and corresponding in shape in transverse section "with the half circumference of the ball to be "smoothed off, the section gradually diminishing," so that it "becomes reduced as it winds towards the edge to the intended "size of the ball when finished." In the centre of the plate is an orifice of sufficient size to allow the shaft to pass down it, and the balls to drop through from a feed hopper fixed in the framework directly over the orifice. Each ball drops on to the surface of the revolver, which forces it "to travel along the whole length "of the spiral groove," whereby it is rounded and finished; it then falls from between the edges of the discs into a receiver. The distance between the discs is regulated by a hand wheel, connecting rod, and lever. "Other ordinary means of communicating motion to the parts may be substituted for those "specified."

[Printed, &c. Drawing.]

A.D. 1861, June 29.—N^o 1661.

DYER, JOHN.—"Improvements in the ornamentation of certain "cabinet furniture." This invention professes to produce on the surface of deal or pine furniture "stained patterns or devices "in imitation of the ordinary marquetry, inlaid, moulded, or "banded work in coloured fancy woods." The surface is to be first coated "with a thin solution of gum, size, or wax." The ornaments are then produced "by means of blocks, stencil plates,

“ transfers, or by hand, with the ordinary chemical dyes, stains, or other colouring matters.” The moulded and banded parts are picked in, combed, or pencilled; and the whole is French polished. If colored printing ink is employed, “ the preparation of the groundwork may be dispensed with;” and when “ ordinary pigments ” are applied, they “ should be previously mixed with turpentine and gold size.”

[Printed, &c. Drawing.]

A.D. 1861, July 1.—N^o 1672.

POTTS, FERDINAND, and COX, RICHARD.—“ An improved mode of treating tubes used for posts for metallic bedsteads and other purposes, and in the machine for producing the same, and which said machine is also applicable for cutting-out and piercing articles of sheet metal, such as washers, metallic bucket ears, and other such like articles.” The tubes are “ such only as are required to be connected with cast-iron or other metal joints,” and the improvement has for its object “ the preventing the molten iron or other metal running through, and filling or partially filling up the interior ” of them. This is effected by inserting in the ends, which are to be laid in moulds for the angle or joint to be cast on them, discs “ cupped or otherwise treated so that they may be readily forced in position ” about a quarter of an inch within the tube. The discs are made by “ a new mechanical arrangement,” which will “ by a simple arrangement of the cutting-out and forming tools ” cut out and pierce washers and the like “ at one operation.” The machine, which is minutely described in the Specification, is mounted on an iron base, with standards resting on a wood, brick, stone, or other suitable foundation, and by preference is arranged to work horizontally. The essential parts are, 1, a shaft carrying a fly wheel, fast and loose pulleys, and a pinion; 2, a shaft, on which are a cog wheel and a cam; 3, a plunger working backward and forward in guides “ according to the throw ” of the cam; 4, a bolster for receiving “ the bed tool.” The plunger is fitted with such mechanism, and the bed tool is so correspondingly shaped, that at each revolution of the cam a pierced washer is cut out; this is freed from the plunger as it “ recedes by the backward throw ” of the cam; and a “ self-acting process,” caused by a “ pendulous arm ” connected by a rod to the cog wheel, relieves the metal,

(from which the washer has been cut) from the bed tool. This machine will "make and deliver, with the assistance of a boy to "feed or supply the plate or sheet metal from which the articles "are to be cut, at the rate of about fifty per minute;" but in some cases the patentees "purpose using a self-acting feed apparatus, consisting of feed rolls with a ratchet and pall," and put in motion by the cog wheel. For cutting out and piercing bucket ears & "such irregularly-shaped articles," an alteration will be required only in the arrangement of the mechanism of the plunger and of the bed tool.

[Printed, 10d. Drawing.]

A.D. 1861, July 5.—N° 1708.

HUTSON, JOHN.—"Improvements in cornices, laths, and panels "for bedsteads and other articles of furniture." In cornices "the large sweeps, or curves, or angles" are made by passing thin sheet metal between suitable rollers; the smaller ones are stamped, pressed into form, and soldered or otherwise joined together. "Rounded corners" are formed of stamped or cast metal and soldered or riveted to the straight parts. The short laths have their stud holes punched at right angles to each other. In one or all of the long laths a tongue "is punched out and "turned under" at the point where the laths cross each other; the tongues are slid under the laths and retain them in position. The long laths are made in two parts; on one is a notched "tightening-up ring or lever," on the other a pawl. The panels are of corrugated metal; the frames have pins at bottom which fit into holes in the rails, and eyes at top for passing over the screwed pins on the posts where they are secured by knobs.

[Printed, 10d. Drawing.]

A.D. 1861, July 16.—N° 1791.

HOLDER, DANIEL, junior.—(*Provisional protection only*).—"Improvements in foot & kneeling stools." The stool is made with two or more surfaces, one stuffed, &c. for kneeling on; it is mounted on axes in a stand, and stops, rendered noiseless "by "india-rubber or other suitable packings or contact pieces," are applied "at the ends of the rotating part."

[Printed, 4d. No Drawings.]

A.D. 1861, August 6.—No 1949.

POTTS, GEORGE.—(*Provisional protection only.*)—"Improvements in the construction of elastic steel mattresses." In one modification a wooden frame is used for the under side; upon it are fixed a number of "double-cone spiral springs." Upon and attached to the springs is "a framework made of thin flat steel bands, and comprising an external frame connected by interlaced bands." In another, both the upper and under frames are made of thin steel bands. In both, the mattress is constructed by preference in three sections; these are covered with ticking. In some cases either the upper or under frame may be made of round or other wire.

[Printed, 4d. No Drawings.]

A.D. 1861, August 6.—No 1957.

NEWTON, ALFRED VINCENT.—(*A communication from Thomas Rainey*)—"Improvements in the construction of reversible seats." In these seats, suitable for carriages, steam vessels, and other uses, "the inclination of the back may be reversed at pleasure, and with it the inclination of the seat." The seat, which may be of wood and of any suitable width, is supported on two end pieces of cast metal and connected by cross bars of wood. Secured to each extremity of the seat is a metal plate carrying a stop at each end, and at the middle of its lower surface a projection at right angles thereto. "These projections each serve to carry a horizontal journal," which has its bearing in the upper part of one of the end pieces. The seat "is about balanced on its journals." Two radius bars move on pivots at the lower parts of the end pieces "in a vertical line with the journals;" their upper ends are connected by a cross rail, and on each bar is a loop in which the edges of the plates fit. These loops are at such a point in the bar, that when the bars "are adjusted back at either side of the seat," it will generally "be about at right angles thereto." If it is desired "to have the seat rather more inclined relatively with the back," the plates are made slightly curved, the concave surface being uppermost; but for use at table as an ordinary seat, the plate "is made straight at one end and curved downward at the opposite end." A "supplemental back" is sometimes attached; it swings on pins at the bottom of the cross rail and is coupled at its lower end to the radius bars by links.

[Printed, 8d. Drawing.]

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A.D. 1861, August 13.—N° 2012.

REMY, JACQUES GUILLAUME.—“Improvements in the manufacture of articles of furniture by utilizing certain parts of the cedar tree in such manufacture, which have heretofore been considered and treated as waste.” The Havannah cedar tree has a portion of its trunk (called forks) knotty and rugged; these parts are rejected as unfit for any other use than fire-wood,” and the object of this invention is to render them useful for the manufacture of articles of furniture. They are prepared by sawing them into veneers and glueing them together “for the purpose of giving to them consistency and hardness, which such parts are naturally deficient in.” The wood, thus treated and polished, “presents a more brilliant appearance than the most costly mahogany, and has the advantage of neither degenerating in appearance, cracking, or requiring to be repolished occasionally.” Furniture, “made of the knotty parts of the Havannah cedar prepared as above-described, will improve in brilliancy of appearance and value the older it gets.”

[Printed, 4d. No Drawings.]

A.D. 1861, August 22.—N° 2099.

TELFORD, RICHARD, and SANDERS, JAMES.—“A substitute for castors for furniture,” consisting of “a kind of shoe with a smooth rounded bottom or bearing surface,” and applied to furniture “in a manner similar to that in which castors have ordinarily been applied thereto.” The upper part is a socket or a plate, the lower part a “solid piece of metal, earthenware, glass, or other material of a hard nature and capable of being formed with a smooth rounded bearing surface.” It is to be observed that “the rounded surface is not part of a circle.” On the inside of the socket is cast a shoulder, “against the under surface of which the shoe rests when inserted.” The parts are united “by cutting a circular groove in the shoe and forcing the lower edge of the metal socket into it;” but the patentees do not confine themselves to this mode of attachment. In some cases the shoe may be made without a socket “and formed with a projecting plug” which can be glued or cemented into a corresponding hole in the furniture.

[Printed, 6d. Drawing.]

A.D. 1861, August 30.—N° 2167.

BRAND, HENRY.—(*Provisional protection only.*)—"Improve-
ments in mattresses formed with springs." The mattress is
made "in two, three, or more pieces," in the customary manner.
Each piece is enclosed in canvas "with the exception of the faces
"that abut against each other when placed together;" these are
left open for facility of cleaning. The edges of the canvas, when
the pieces are put together, are united by lacing or in any other
manner. Stuffing may be added on the upper surface between
thicknesses of canvas.

[Printed, 4d. No Drawings.]

A.D. 1861, September 5.—N° 2219.

HARRISON, CHARLES WEIGHTMAN.—(*Provisional protection
only.*)—"Improvements in the construction of casters." The
roller is made of vulcanized india-rubber; it may be "of spherical
"or other suitable form and composed wholly or partly of vul-
"canized india-rubber;" the axis on which it turns is of metal.
Or the roller may be wholly or partly (except its axis) of "vul-
"canite or other hard elastic compound of india-rubber, or of
"other materials combined therewith." The other parts of the
caster are of the ordinary construction.

[Printed, 4d. No Drawings.]

A.D. 1861, September 13.—N° 2273.

FARLAR, WILLIAM.—"Improvements in sash fastenings, which
"improvements are also applicable to other purposes," namely, to
dining tables and to articles "where parts require to be secured
"together and tightened at the same time." The invention is
described 'as applied to a window. On the bottom rail of the
upper sash is fastened a plate carrying an "ordinary lever catch,"
at the end of which is "a projection or stud, by preference, of a
"V or diamond shape," and on the top rail of the lower sash a
plate carrying a screw nut, on which an arm travels provided with
a recess similar in shape to the stud. To secure the sashes the
catch is pulled over the lower sash and beneath the arm; the
thumb piece of the screw is then turned until the recess on the
arm abuts against the stud. To loose the fastening the screw is
turned in the reverse direction until the arm comes against a lug
at the end of the screw, when "the point of the arm" rises.

[Printed, 6d. Drawing.]

A.D. 1861, September 13.—N° 2280.

MURRAY, THOMAS LAMIE.—(*A communication from Frederic Holthausen.*)—"Improved applications of mica, previously colored " or metallized, for letters and signs, decorating churches, rooms, " shops, frames, and other ornamental and useful purposes." This invention " relates to improved applications of mica, prepared " as described in a previous Patent, for which protection was " granted to Mr. Clark," dated June 17th, 1861, No. 1549. " It " consists principally in the application of mica to frames for " looking-glasses and pictures," to the objects above-mentioned, and to " other purposes requiring gilt or silver decorations." The mica is prepared and applied as follows:—"It is first cut to the " desired thickness with an ivory or steel knife and is then coated " with a thin layer of isinglass diluted in water, and the gold or " other surface is applied, after which it is allowed to dry." A pattern of copper with a design cut out on it is placed " on the " reverse side of the mica," and all " superfluous parts of the " metal " are removed with a small brush. Colours are now laid out, and the whole is coated " with a solution of liquid glue diluted " in spirits of wine." The frame or other object is coated with glue or other adhesive substance; and when this has become " comparatively dry," the mica with the design on it is placed thereon and " allowed to dry for about three hours, after which all " superfluous parts are removed and the external surface of the " mica made smooth." To render the junction of several pieces of mica imperceptible, they are glued together with Venetian glue, and a hot iron is passed over the parts where the mica is joined.

[Printed, 4d. No Drawings.]

A.D. 1861, September 16.—N° 2306.

CLARK, WILLIAM.—(*A communication from Louis Augustin Alexandre Cavenne and Frédéric Holthausen.*)—(*Provisional protection refused.*)—"Improvements in the application of mica to " ornamental and other purposes." "This invention relates to " covering all kinds of gilding, silvering, and other leaf metal " surfaces, coloring, and all kinds of decorations generally, with " sheets of mica." The process is especially applicable " for pre- " serving leaf metal and frames of all kinds, and for beading, " pillars, mouldings, and cornices of rooms, churches, or other

"structures." After the gilding, &c. has been applied to the surface to be covered, "the sheets of mica split of the required thickness are applied thereon by pasting them by means of any kind of transparent glue, or the mica may be previously metalized, colored, or decorated in any suitable manner, and then applied by gumming," the metallic or decorated surface being placed next the wood of the frame." The junctions of the sheets of mica may be rendered invisible by means of "a small quantity of essence of Venetian turpentine," and then by "passing a hot iron over them;" any defects in the mica may be remedied "by the application of lime or by other means."

[Printed, 4d. No Drawings.]

A.D. 1861, September 19.—N° 2346.

SEDLEY, ANGELO JAMES.—(*Provisional protection only*).—"Improvements in metallic bedsteads and sofa bedsteads." The side rails are made each in three parts, pin-jointed together and to the legs. There are three frames, the middle one twice as large as either end one. The middle frame is composed of the middle portion of the rails, laths, two transverse bars, and two other bars whose extremities form the pin-joints. On the legs, below the pin-joints, are "bracket clutches" capable of being moved round. The end frames are hinged respectively to the head and foot rails; they rest on the end portions of the side rails, but fold independently of them. "Under either pair of the pin-joints" may be placed legs folding in one direction only; or on either pin-joint bar may be two sliding clutches to keep the joints firm in position. The other joints are constructed to fold in one direction only; or they also may have clutches. The legs are attached to the pillars by pin-joints, screws, or sockets; they are provided with "diagonal or curved struts," at the lower ends of which are "dovetail bolts attached by pin-joints. These dovetail bolts, when the bed is extended, enter between dovetail guides formed on the sides of the end portions of the side rails." The bedstead folds upwards at one end and downwards at the other; the end frames fold upwards.

[Printed, 4d. No Drawings.]

A.D. 1861, September 20.—N° 2352.

WALTER, HENRY and JOHNSTONE, DAVID.—(*Provisional protection only*).—"Improvements in castors." The patentees

“ employ a ball sphere or globe of glass or other suitable material,
 “ and cause it to work against three rollers placed in triangular
 “ positions and turning upon pins or axes fixed to a metal frame,
 “ having a pivot working in a step or socket, which arrangement
 “ enables the ball to turn free of side friction.” Or one roller
 “ may be central with the ball and the others at each side, the
 “ said rollers turning upon axes in a metal frame working in a
 “ step or socket.”

[Printed, 4d. No Drawings.]

A.D. 1861, September 25.—N° 2398.

RUSSELL, GODFREY.—“ Spring stretchers or bedsteads for camp,
 “ hospital, or general use.” The sides are two wooden poles, the
 under side of which is “thicker in centre gradually bevilled to
 “ both ends;” or they may be of angle iron; there is a handle at
 each end. The head and foot bars are of angle iron “so fitted
 “ at the ends as to drop into iron sockets.” The legs are springs
 more or less curved and arranged to fold under the sides and to
 stand firm when down. The sacking is fastened to one side and
 to the head bar “to within a few inches” of head and foot,
 and laced to narrow strips riveted to the other side and to the
 foot bar; or it may be laced “all round.” A head rest is fitted
 into sockets in the head bar; it is “formed by two uprights, with
 “ bars at right angles, attached with clip or socket hinges,
 “ shouldered to the required horizontal angle, with or without a
 “ cross-bar, cranked at both ends, uniting their outer ends with a
 “ pivot joint; over this saddlers’ web or canvas is tightly sewn.”
 The awning is supported on two wooden or iron arches whose
 ends fit into sockets on the sides; a cord sewn into it is attached
 to the handles by hooks or by “rope or iron grummets;” the
 cord can be tightened at one end by the addition of a strap and
 buckle. “The curtains have one fastening on either side under-
 “neath side bars, and a hook or stud for each one inside the
 “arches.”

[Printed, 10d. Woodcuts and Drawing.]

A.D. 1861, September 28.—N° 2427.

MOIROUX, JOSEPH. — (*Provisional protection refused.*) — “A
 “ portable spring bedstead and matrass, moveable and fixed.”
 The object of this invention is by a “moveable spring to render

"more or less flexible any portion, right or left, middle or all parts," of a mattress. Each spring "has two elastics" composed each "of an assemblage of eighty gutta percha threads, "galvanized" and covered "as a stay lace." Each spring is partially fixed; on loosening a catch holding a "transverse shank," one or two elastics "come out," thereby reducing the size of the mattress. "The way of folding" bedstead and mattress is described, but no description of the manufacturing is given. "The hammock bed is made on the same folding-up principle, only that the springs are replaced by a piece of canvas "at the head and foot."

[Printed, 4d. No Drawings.]

A.D. 1861, September 28.—N° 2430.

COMER, CHARLES, junior. — (*Provisional protection only.*)—

"Improvements in the manufacture of metal tubes for bedsteads and other purposes, and in the machinery employed therein." A conical roller in which is a groove is employed; one edge of the metal sheet is placed in the groove, and when the roller is turned round, the remainder of the sheet is bent into a tapered tube; the edges are brazed or otherwise joined together. In making ornamental tubes the sheet of metal is passed between two rollers, "the surfaces of which are made with projections and depressions corresponding to the design to be produced."

[Printed, 4d. No Drawings.]

A.D. 1861, October 14.—N° 2561.

TAYLOR, BENJAMIN, and EDKINS, CHARLES.—"Improvements in porte-robes or dress suspenders, and also in apparatus for the suspension of curtains, draperies, and other articles." The dress suspender is part of, or is combined with, "a waist-belt of the ordinary description worn by ladies;" the belt is perforated with eyelet holes; and a cord is threaded through the holes in loops "to which any description of hook or dress clip may be attached." The looped cord passes through beads or runners, "thus keeping together the two parts of the loop at the head of the hook." Or a small chain and spring hook "may be attached to the eyelet holes without a cord." For the suspension of curtains and draperies used with French bedsteads, "a tubular ring of metal" is substituted for a belt; "this ring

" is to be screwed in the manner usual with such draperies into the ceiling or other joists, the cord or chain passing in the interior of the tubular ring, and the loops for the hooks through perforations in the ring." Or the chain and hook above mentioned may be employed. This invention is applicable to the suspension of articles in shops, &c. and also of pictures; for the latter purpose "a perforated metal rod or tube is to be employed for the cord or chain to pass through, using if necessary small friction pulleys upon the rod or tube," and the friction upon the cord will be lessened by attaching a small roller to each eye upon the frame. To prevent accidents arising from the cord breaking, "knots can be made upon the cord in such positions at the back of the rod or in the tube, that should the cord break in any part, the knots check the cord from running through."

[Printed, 8d. Drawing.]

A.D. 1861, October 18.—No 2595.

PEYTON, EDWARD.—"Improvements in the frames of metal bedsteads." This invention consists "in casting or otherwise fixing the dovetail tongues on the side and end frames of metal bedsteads at an angle, and in forming the dovetail grooves into which the tongues are to be inserted at a corresponding angle."

[Printed, 6d. Drawing.]

A.D. 1861, October 22.—No 2640.

FOX, HOWARD BUSBY.—"Improvements applicable to iron and other metallic bedsteads." The patentee applies wooden footboards, head-boards, and cornices to metal bedsteads, in order "to produce harmony with other articles of chamber furniture." The mode of carrying out the invention as described in the drawing (although others may be used) is as follows:—Metal plates are screwed to the wooden boards and fixed to the bed posts by studs and collars at top and thumbscrews at bottom, while "distance studs" insure a vertical position. The several parts of a wooden cornice are formed into one piece and fastened to the tester rails by thumbscrews, or by hooks, or by means of a groove cut in the under side to receive the rails, or by a flange formed on the rails.

[Printed, 8d. Drawing.]

A.D. 1861, October 30.—N° 2723.

WINFIELD, ROBERT WALTER.—“An improvement or improvements in the manufacture of pulley rods for curtains commonly called French pulley rods.” The rod is made of wrought iron, and the ends, on which the pulleys or rollers work, of malleable cast iron. The rod is a tube or hollow cylinder, and the ends are connected to it “by a transverse pin and solder.” The rod may be lacquered, bronzed, or otherwise ornamented.

[Printed, 4d. No Drawings.]

A.D. 1861, October 30.—N° 2724.

WINFIELD, ROBERT WALTER.—“An improvement or improvements in ornamenting metallic bedsteads and other articles of metallic furniture.” The ornaments employed are alternately glass, china, earthenware, or other vitreous or semi-vitreous material, and metal, the former being fixed in the latter. For pillars and rods the ornaments are usually of “a ring-like figure,” and are fastened on by screwing the lower metallic part to a threaded tube passed over the pillar or rod and secured thereon by a pin or pins.

[Printed, 6d. Drawing.]

A.D. 1861, October 31.—N° 2733.

NORMAN, GEORGE.—“Improvements in the mounting of cots or cradles,” so that they may rock from head to foot instead of from side to side. The cot is placed in a frame supported at its sides, “but near one end thereof,” by pendent rods which oscillate on trunnions carried by standards; these are braced at top and bottom by cross bars. “The frame may have a fixed inclination, or the inclination may be adjustable by a segment rack or equivalent means.” To the under side, “and in the line of suspension,” a weight is applied. Bent rods on the top and back of the standards support a canopy. The whole may be mounted on castors. Brackets fixed to a wall and fitted with trunnions may be substituted for the standards. Or the cot may be mounted “on a longitudinal rocking frame, so arranged as to keep the head of the child elevated while the cot is in motion.”

[Printed, 10d. Drawing.]

A.D. 1861, November 9.—N^o 2814.

McNAIR, Robert. — "Improvements in casings for stitching machines, and in adapting the same for writing." The casing is fashioned by preference "like what is commonly known as a Davenport or lady's writing table," and the improvements apply "to the parts forming the sides of the table or stand and the top cover for enclosing the machine when out of use." The desk portion "is contrived either to lift completely away from the stand or to slide forward." In the former arrangement "double doors are formed at the front of the stand, and the front or ornamental legs are attached to them so as to swing round with them." In the latter there is fixed at each side of the stand top, near the front edge, "a headed staple," which enters a recessed groove in the under side of the desk, and "metal strips," screwed to the edges of the groove and "cut away at one part to allow the desk to be entirely removed or replaced," catch under the head of the staple. In the desk is accommodation for writing materials, "there being an otherwise unoccupied space for papers immediately beneath the inclined lid, whilst further back there are two sets of small drawers, one set at each side." The space between the sets "serves to cover and enclose the stitching details and is inaccessible from the inside of the desk," but, when the desk is moved back, "a door at the back closes the opening, and the stitching details are by it entirely enclosed." A door, which gives convenient access to the treadle, "is fitted to the back of the stand."

[Printed, 6d. Drawing.]

A.D. 1861, November 15.—N^o 2880.

STAUFEN, WERNER. — (*Provisional protection only.*) — "Improvements in the manufacture of brushes and in preparing certain vegetable fibres for such and other uses." This invention consists in the preparation and application "of the vegetable fibres of the arenga saccharifera." The fibres are "of great length and of considerable strength;" they are obtained from the leaves; "they are collected after the other portions of the leaves have become dry, and have more or less shelled off." They are prepared as follows:—"They are well washed and then subjected to the action of an alkaline solution, after which they are dyed, and in the process of dyeing them fatty or oil

“ matters and alkali are introduced and mixed in the dye, and
“ then the fibres are introduced and dyed therein.” The coarser
parts thus prepared are very similar to bristles and “ may be used
“ in place of or in combination with bristles or other materials
“ heretofore used in the manufacture of brushes.” The finer
portions “ may be woven into similar fabrics to those in which
“ horsehair has been heretofore used, and they may also be curled
“ as horse and other hair and used in stuffing furniture ;” whilst
the finest of the fibres “ may be made up into plaits and other
“ forms, and will, when thus prepared, serve as substitutes for
“ like preparations of human hair.” The fibres may be used
in the manufacture of brushes without any previous preparation.

[Printed, 4d. No Drawings.]

A.D. 1861, November 20.—N° 2919.

PEYTON, EDWARD, and BATHO, WILLIAM FOTHERGILL.—

“ Improvements in the moulds or chills employed in casting
“ blocks, dovetail grooves, and other parts of metal bedsteads
“ and other like articles, in frames for carrying such moulds, and
“ in tubes for the pillars of bedsteads and other like articles.”
The mould or chill is composed of an upper and lower portion,
“ fitting accurately on one another ;” the dovetail block is “ laid
“ in a recess ” formed in the lower portion, “ wherein it is free
“ to move within certain limits ;” the short end of a lever bears
against the under side of the dovetail block, “ while the long end
“ thereof extends outside the chill, and carries an abutment.”
Two levers, free to move with shafts (which terminate at each end
in right and left-handed screws, and work through nuts in recesses
at the lower part of the chill), extend upwards round the chill ;
each ends in a hook, and an eccentric arm is jointed to the lever on
the right-hand, “ whereby it is caused to become engaged or dis-
“ engaged ” with the other, “ and thus act as a clamp for hold-
“ ing the parts of the chill together.” If the corner pieces are to
be cast hollow, suitable “ drawbacks ” are to be inserted ; “ any
“ number of these pieces may be used, in fact, where elaborate pil-
“ lars are required,” and the whole chill “ may be made in pieces
“ according to the pattern or device to be produced.” To remove
the casting, turn the arm ; this disengages the hooks, thereby caus-
ing the lower portion to recede ; at the same time the right-hand
lever acts against the abutment, depresses the long end, “ raises

" the short end thereof, and with it the dovetail block and pillar " out of the lower portion." There are drawings of chills " for " casting the dovetails on to the side and end rails," and " for " casting dovetail grooves on to the French ends of bedsteads;" these require no description. A frame for carrying chills is constructed as follows:—the chills are bolted into a " planed bed " supported by standards, which are united by girders or " stretchers;" the bed is mounted on journals, which are free to turn in bearings formed in the standards; the journals " carry " at one or both ends " a crank handle, " whereby the frame is " caused to turn or oscillate." When the frame is used " for " casting French ends," cross slides " are fitted in addition to " the bed."

[Printed, 3s. 10d. Drawings.]

A.D. 1861, November 22.—N^o 2938.

PEYTON, EDWARD, and BATHO, WILLIAM FOTHERGILL.—
" Improvements in laths for supporting bedding and cushions in " bedsteads, couches, sofas, and seats." Each lath is elliptical, being composed of two bowed strips of metal. Between the strips are fixed either hoops of steel, or double-cone springs, or springs formed of four bars linked together (in somewhat of a diamond shape), and connected at two joints by a horizontal coiled spring. The lath ends are riveted together, or they may have a coiled spring between them. The bar springs may be connected to each other by coiled springs.

[Printed, 10d. Drawing.]

A.D. 1861, November 25.—N^o 2959.

JOHNSON, JOHN HENRY.—(*A communication from Robert Marcher.*)—" Improvements in machinery or apparatus for pre- " paring oval picture frames." Two machines are described; the first is an eccentric lathe, composed of:—1, a suitable frame, whereon is mounted a mandril carrying a face plate, to which an oval frame is secured; 2, a scraper or working-down tool, " formed " with its working edge the reverse of the intended moulding;" it is attached to the upper end of an arm, whose lower end is pivoted to a rocking shaft; or it may be attached to the upper end of a spring, having its lower end pivoted or otherwise fastened to the frame; by either arrangement, the working edge " is held

“ to the face of the moulding, and is thereby rendered self-adapting to slight inequalities of the moulding as it rotates with the face plate.” A weight may be substituted for the arm or spring to hold the scraper to its work. “ The cement used for enamelling ” is applied “ to the surface of the moulding,” before the lathe is set in motion. The second is a “ trammel or elliptograph;” it is worked by hand, and “ the frame to be enamelled ” is secured to the surface of a table or bench; but the frame “ may be secured to the face plate of a concentric lathe, and the trammel held in a fixed position, except so far as to permit the scraper to yield to any slight variation.” It is composed of, 1, the table or base; 2, an upright bar thereon (precisely in the centre of the frame), having on its upper surface two grooves crossing each other at right angles; 3, a horizontal bar slotted nearly its whole length, and having secured to its inner end two blocks, in each of which is a stud fitted loosely; the lower end of each stud has a flat portion formed on it, and these portions work in the grooves; 4, a foot resting on the table and supporting the outer end of the horizontal bar; 5, two guides secured to the horizontal bar by set screws; the guides are vertical bars, having at each end a horizontal portion recessed for the reception of the scraper, which fits loosely therein, “ so as to be self-adapting to irregularities.” The frame being covered with the cement (glue and whiting), and the different parts being adjusted, the longitudinal bar is rotated by hand or otherwise, and the scraper “ takes off all the superfluous material, and smoothes in a perfect manner that which remains on the frame.”

[Printed, 102. Drawings.]

A.D. 1861, December 2.—No 3022.

WAKENELL, JAMES.—“ Improvements in the construction of “ invalid bedsteads, convertible into other articles of furniture “ for the use of invalids.” To the frame of an ordinary bedstead is fitted a moveable bottom which runs in grooves on friction rollers or on flanges on grooved rollers. The bottom is jointed at each end “ at about one-third of its length,” and the upper end may be made to assume an inclined position by means of a winch and a pinion which works in a rack on the under side of the bottom. Small friction rollers at or near the corners of the upper division run up in grooves or on flanges on the inside of the head

posts and steady the bottom laterally, and any stop action "may" be employed to prevent the apparatus from running back." A table, "furnished with a rising desk," may be connected to the above in the following manner:—"The knobs of the foot posts" being removed, the table travels up a groove in each side of the "fixed or under frame" and is secured to the moveable bottom by cotters which pass through the legs; "a chain, strap, or other" tie "unites the table and the inclined upper end together. The apparatus forms a table and easy chair combined by sliding the table and bottom (which is suspended by the cotters between the legs) off from the fixed frame and by lowering the foot division; or by sliding the bottom to the foot of the fixed frame. If the table is removed when the bottom is formed into a chair, a chain, tie, or strap must be employed to connect the upper to the middle portion of the bottom.

[Printed, 10d. Drawings.]

A.D. 1861, December 17.—No 3161.

BUNNEY, JOHN BICKERTON, and WRIGHT, THOMAS.—(*Provisional protection only.*)—"Improvements in ornamenting" metallic and non-metallic bedsteads and other articles made "principally of metallic rods or tubes." To ornament the pillar of a metallic bedstead the pillar is laid in any suitable mould "having internally the figure of the ornament to be produced," and melted metal or alloy is poured in. If the pillar is of wood or other non-metallic substance, it is first coated "with plaster of Paris or other solid which conducts heat badly." If the ornament is "in high relief," the pillar is covered with plaster of Paris or other earthy matter "having the general figure of the" ornament," and the casting is made on the covered pillar. Or the ornament may be cast (hollow) apart from the pillar and in two or more pieces; these are soldered together and placed upon the pillar, the hollow being filled up with plaster of Paris, &c. To ornament the head and foot rails of metallic bedsteads the rods are bent into the required shape and laid in chill boxes or moulds, when the ornaments, "by preference of zinc or of an alloy of tin" and lead and zinc, "are cast on to them. The ornaments are afterwards coated "by processes of electro-deposition" or "finished by painting, gilding, or japanning."

[Printed, 4d. No Drawings.]

A.D. 1861, December 21.—N° 3213.

OSMAN, CHARLES.—(*Provisional protection only.*)—"Improve-
ments in the manufacture and application of elastic or yielding
surfaces for sitting, lying, or reclining upon." The first part
of the invention consists "in manufacturing elastic surfaces of
vulcanized india-rubber of cellular form," and in applying the
same in the construction of cushions, mattresses, &c. The second,
in forming elastic surfaces in the three following ways:—1, "by
connecting the upper or lower ends or both of a series of lever
arms" with bands of rubber or with springs; 2, by means of
curved springs supported on a fixed surface; 3, by causing the
cushion, &c., "to be supported upon projections carried by a series
of helical or other springs."

[Printed, 4d. No Drawings.]

A.D. 1861, December 31.—N° 3268.

HASLAM, JOHN.—"Improved apparatus for winding, holding,
and letting-go cords, bands, or chains, particularly applicable to
window blinds." The first part of this invention "applies to
the furniture of blind rollers where the ordinary endless cord is
used." Either the roller and pulley are made of one solid piece
of wood, or the pulley is made of "gutta percha, indian-rubber,
leather, buffalo hide, or horn." Instead of using a rack and
pulley an eye or staple is fixed in the woodwork, and a screwed
wire is passed through it "in a perpendicular position." The
upper end of this wire has a hook for the reception of the endless
cord, and on it below the eye a nut is screwed, and "by turning
this nut the tension of the cord can be regulated." The second
part relates "to that class of blind furniture wherein a single cord
is employed coiled on a barrel at one end of the roller." The
barrel is either "of one piece of solid wood with the roller, or (if
separate) of any of the substances above enumerated." The
right bracket is provided with an arm carrying a wire "so formed
and arranged as to leave a cleft or opening between it and the
arm, tapering inwards, through which opening the cord or band
passes." This cleft "is so situated with regard to the barrel
that, when the cord hangs perpendicularly, it falls into the
narrow part of the notch and wedges itself fast, but when the
cord is held in a sloping direction outwards by the hand, it

" passes through the wider part " and is free to move up or down. The wire is made " to spring lightly," so as to allow it to give way if any one attempt to pull down the blind without releasing the cord. By the following arrangement the roller " can be taken " down without disturbing the cord and pulley " or barrel :—On the end of the roller is a cap having two holes therein, and on the pulley or barrel " two pins capable of fitting into the two holes ; " or the holes and pins may be reversed. The central pin on which the pulley or barrel runs " is fixed to the bracket," so that the pulley or barrel " maintains its place on the bracket when the " roller is removed." The second part of the invention " is " applicable for holding and releasing cords, bands, or chains for " other purposes."

[Printed, *sd.* Drawing.]

1862.

A.D. 1862, January 20.—N^o 142.

HOLT, THOMAS.—(*Provisional protection only.*—"Improvements " in folding iron chairs & and chair bedsteads." The frames, legs, and arms are of the ordinary construction ; " it is the mode " of sustaining the chair back " which constitutes the invention. " Near the forward upper angle of the parallelogram or other " figure described by the bars forming the arms" a diagonal piece is jointed, a pin or other catch of which takes into notches or holes in the horizontal part of the arms, thereby fixing the arms in position and sustaining the back. " Instead of fixing the laths to the " head part of the principal frame " a light frame is fitted thereto to carry them ; " this is jointed and furnished with a strut piece so " that when used as a bed it can be inclined at any angle."

[Printed, *4d.* No Drawings.]

A.D. 1862, January 25.—N^o 195.

MOUGIN, JEAN CLAUDE FRANÇOIS. — "Improvements in " *barcelonnettes* or cradles for children or for dolls," imparting to them a " swinging, rocking, or see-saw motion." The cradle is of ordinary form, but having the top fixed to the bottom with iron or wooden plates. It is suspended by the middle between two posts

or by the top upon steel plates. "A movement of clockwork is adapted similar to a roasting jack." The patentee gives a detailed description thereof. The rocking is effected "by means of an excentric wheel encompassed by a collar which extends at will;" the wheel is fixed against the bottom of the cradle at either the head or foot. The rocking can be varied "by a connecting rod and winch fixed at one end to the staff of one of the springs of the movement, and at the other end to the cradle itself to turn or slide in a flat plate of iron or copper which is attached to the bottom of the cradle." A dial marks how many times the cradle has been rocked. Or the cradle may be rocked "by one or two weights according to the springs employed to obtain a more prolonged motion." In this modification, "two posts are added at the head and foot of the cradle;" between the posts two pulleys are placed at top, which "receive the cords or chains to which the weights are attached. Between these same posts the weights will descend as if in a groove without being able to turn aside."

[Printed, 4d. No Drawings.]

A.D. 1862, January 31.—N^o 267.

FORYSTH, ALEXANDER.—(*Provisional protection only.*)—"Improvements in the manufacture of frames and in tablets used for advertising purposes." The frames may be made in various ways. 1. Of cast iron; "the metal is run into a suitable mould either plain or ornamented," and after removal from the mould it may be gilt, colored, or otherwise decorated. If preferred, "steel or other suitable metal may be used instead of iron, and portions of the surface or face of the frame polished to contrast with the other parts." The polished parts are to be protected by a coating of transparent varnish. The frames are cast either in one piece or in parts to be afterwards put together. 2. They may be stamped or struck out of sheet metal, "and the die may be engraved to produce ornamental figures on the frames, either in relief or intaglio." Cheap frames are made by preference of tinned iron; otherwise, "sheet brass or copper may be used with advantage." 3. They may be moulded in clay or other plastic material, "which may be afterwards ornamented and glazed or otherwise finished." Advertising tablets are either stamped out of sheet metal or formed of clay or other plastic material, "the letters or device being impressed in the surface of the material."

"and afterwards filled in with varnish, colours," &c. &c. Or they may be made of "paper, millboard, or wood finely divided," the letters, &c. being filled up with suitable colours.

[Printed, *4d.* No Drawings.]

A.D. 1862, February 1.—N° 277.

HARRIS, JOHN. — (*Provisional protection only.*) — "Improvements in mattresses, squabs, pillows, and other like articles of "furniture." Two "thin sections" of a mattress or like article, in separate cases, are stuffed with hair or wool. Feathers (in a separate case or not) are placed between the sections which are then sewn together at their edges. The two sections "are to be "separately tied."

[Printed, *4d.* No Drawings.]

A.D. 1862, February 3.—N° 286.

KING, JAMES JOHN. — (*Provisional protection only.*) — "Improvements in the fastenings of bedsteads, which fastenings "are also applicable to other portable framework." To the post is fixed "a dovetailed socket piece," which projects from the side, "and is received in a recess in the end of the rail." A disc "having snail grooves in the sides" or other "suitable snail "piece" is recessed in the end of the rail and mounted on an axis "so as to present its periphery towards the end of the rail." When fixing the parts together the disc is rotated by a key applied to its spindle. "The narrow part of the dovetailed socket "enters the snail grooves on each side of disc, while the broad "part of the periphery is received in the wide part of the "dovetail."

[Printed, *4d.* No Drawings.]

A.D. 1862, February 12.—N° 370.

BROOMAN, RICHARD ARCHIBALD. — (*A communication from Jean Baptiste Godin.*) — "Improvements in ornamenting cast "iron and other metals in order to fit them for articles of "furniture and decoration and other similar uses." A piece of metal is cleaned, washed, and placed in a furnace heated to a red heat. When the metal "has attained the same temperature as "the furnace" it is taken out and covered evenly with enamel. "It is again placed in the furnace and kept there until the enamel

forms a glaze. The enamelled surface, when cool, is ornamented in colours with a brush, or gilt, or silvered. The effect produced is heightened by applying "metallic and other lustres varied by mixtures of colors with the metallic lustres or by the action of smoke on the lustres." The metal is again put into the furnace, heated to a red heat, and as soon as taken out "placed in a closed vessel, where by means of a tap wood, smoke, gas, or steam is introduced." The furnace has at each end a door "made of fire-brick held in a metal frame." The doors work in slides and "are each suspended at the end of a lever at the other extremity of which there is a counterweight."

[Printed, 4d. No Drawings.]

A.D. 1862, February 13.—N° 381.

EBBUTT, ALFRED CHARLES. — "Improvements in reclining, easy, and other chairs." On the bottom frame is hinged "a wood or wood and metal frame, to which the back is fastened." The seat rests on this upper frame or on rollers attached thereto and is hinged to the front of the bottom frame. A toothed quadrant, fixed to the side of the bottom frame, passes through a slot in a spring catch which is fastened to the top of the upper frame. A spring presses a handle across the slot against one of the teeth, thereby retaining the back and seat at any inclination. A spring bolt and perforated plate will answer the same purpose as the quadrant and catch.

[Printed, 8d. Drawing.]

A.D. 1862, February 13.—N° 389.

BURROWS, GEORGE CRISP. — "Improvements in lounges, seats, or other apparatus for sitting or reclining on, which improvements are also applicable to rocking-horses." The hind legs of the chair are triangular in shape; the sides and base are formed in a piece with or united to the seat and back. The apex of each is pin-jointed to a hind corner of a base frame; these joints form the centres on which the seat and back rock. The rocking is limited by links connected to each other and to the front side of each triangle and to each front leg. The base frame carries a foot rest. A sofa or settee is composed of two such chairs placed front to front; one base serves for both; the front legs are not required, and the links connect the two chairs; the

whole is mounted on castors. A rocking-horse may be mounted on a base forming two sides of a triangle, the centre of motion being the apex, "which may be a pair of small wheels."

[Printed, 8d. Drawing.]

A.D. 1862, February 14.—N° 396.

WHITFIELD, SAMUEL BENJAMIN. — "Improvements in the manufacture of iron bedsteads, and in the manufacture of ornamental iron tubes or columns for the construction and ornamentation of iron bedsteads." The improvements in bedsteads consist in applying to the rails ornaments made of stamped or pressed iron; these are fixed on "by junctions of cast iron," or by riveting, or otherwise. Ornamental tubes or columns are stamped in halves, the edges of which are brazed together; stamped mounts are soldered or brazed on to them at each end; they are screwed to a central rod which carries the corner block, but they may be made without a central rod. The columns and mounts are either plain or stamped with ornamental designs.

[Printed, 8d. Drawing.]

A.D. 1862, February 14.—N° 398.

CLARK, WILLIAM. — (*A communication from Félix Hilaire Galliniard.*)—(*Provisional protection only.*) — "Improvements in mounting and fixing the handles or knobs of doors, furniture, and other articles." These knobs "are generally formed of three parts," 1, "the knob of fusible silicious material;" 2, "the mounting or part on which the knob is adjusted;" 3, "the spindle forming the base of the handle." The invention consists "in securing the spindle in a recess formed in the interior of such knob, the pin for fastening the knob being carried by the mounting, which arrangement affords greater strength and prevents the mounting becoming loose." A cavity is formed in the knob for receiving the end of the spindle, which cavity is furnished with a metal socket "to prevent the glass breaking by any slight movement of the spindle."

[Printed, 4d. No Drawings.]

A.D. 1862, February 22.—N° 469.

CHAVASSE, HORACE, MORRIS, TIMOTHY, and HAINES GEORGE BATTISON. — "Improvements in the manufacture an

"ornamentation of metallic bedsteads, part of which is also applicable to other articles," namely "curtain rods, cornice poles, balusters, and other articles of metallic furniture." The rods for pillars and legs of bedsteads are freed from "scale or oxide in the usual manner," passed through a draw bench plate, coated with tin or lead, and again drawn through the draw bench plate, when they are "in a condition to receive a coating of brass, bronze, German silver, metal, or other metallic alloy by the usual electro-deposit process." When corners of iron are to be cast on the pillars, the rods are only cleaned and drawn before the casting; they are then tinned, dressed, burnished, or polished, before electro-depositing the brass, &c. upon them. Sometimes the rods are covered with sheet zinc, the edges being "well soldered together either before or after being placed upon the iron;" they are then drawn, and the electro-deposit is applied. Sometimes zinc tubing is electro-plated, and then "slipped on the pillars and secured by screwing on the knobs at the tops, and the knobs or knobs and bowls at the bottom." Sometimes the pillars are made wholly or partly of such zinc tubing. In making head and foot rails, the prepared iron is cut into lengths, bent if required into form, and united by casting thereon ornaments of any suitable metal or alloy, the moulds employed being by preference made of brass or gun metal, and "previously heated to the fusing heat or nearly to the fusing heat of the metal to be used in casting;" after the casting the electro-deposition follows, and the burnishing or polishing and lackering. "Beads, knobs, and other ornaments" are made in a similar way. Shell ornaments of zinc, sheet tin, &c. are made "by stamping, spinning, or drawing them in two or more parts" and soldering the parts together; they are fitted upon the pillars "either in part or over their entire length," and secured in any suitable manner; the electro deposit is applied either before or after the fixing, and they are finished by burnishing or polishing and lackering. "To prevent indentation" the cavities are sometimes filled up with gypsum, cement, or a mixture of gypsum, cement, or lime, or any cheap and light substance, as sawdust either alone or mixed with cement, glue, size, resin, or pitch."

[Printed, 4d. No Drawings.]

A.D. 1862, March 4.—Nº 591.

SEDLEY, ANGELO JAMES.—"Improvements in metallic bedsteads, sofa bedsteads, and folding chairs or seats." The main

frame of the bedstead is made in two or more portions hinged together. The ends of the side rails and the lower ends of the side rails of the head and foot frames are formed with corresponding bevils or inclines; a link is pin-jointed near to each end of each rail, so that when the head and foot frames are set up the inclines "butt together," and the links are horizontal or nearly so. In a similar manner elbows of sofas are attached to the front and back rails, and backs of chairs to the side rails of the seat.

[Printed, 8d. Drawing.]

A.D. 1862, March 13.—N° 693.

CALVERT, GEORGE—(*Provisional protection only*).—"Improvements in castors." This invention, which relates to spherical castors, "consists in fitting in the socket an inverted cup held by a stump or bar, and in placing above the upper end thereof a spring; grips or claws are continued from the bottom of the socket to prevent the sphere from getting away; or instead of claws a cup may be used. The sphere revolves in contact with the edges of the inverted cup, which is free to revolve round the stump, or the stump and cup may be fixed together" and "move in the socket as one piece."

[Printed, 4d. No Drawings.]

A.D. 1862, March 29.—N° 883.

HART, EMANUEL BERNARD.—(*A communication from Isachar Zacharie*).—"Improved machinery for cutting cork, so as to render the same suitable for stuffing purposes," that is, that it shall be reduced to a condition "resembling stringy or fibrous material." The machine stands on a square iron frame and standards, and from front to back "a shaft is set in bearings;" the rear of the shaft carries a "circular knife-edged saw," the middle a driving pulley, and the front a screw "which gears into a worm wheel set on a shaft below the worm shaft." The worm wheel shaft "works in bearings at the top and front of the frame, and on each side of the worm wheel there is a cam on the shaft." These cams "regulate the motion of two levers below them, their fulcrums being in the front cross bar of the frame, and they extend to the rear of the machine, where they are connected with rods, beams, and an universal joint attached to the knife boxes, and feeding boxes placed on the top of the frame." The knife boxes "have a square opening nearly in the centre, into which are fitted

“ four or more blocks with grooves cut therein;” each groove contains a knife, so that when placed in a position for cutting, four or more tiers of knives are visible.” The feeding boxes are square boxes open in front and rear with small openings on each side, top and bottom, for grooved rollers or cylinders to enter in part, the top of the box not being stationary permits of increasing or decreasing the quantity of cork to be used. From this loose cover, just in front of the rear roller, another independent cover is suspended from a rod attached to a large screw which turns in a female thread cut in a cross bar on standards outside and above the boxes; this cover exactly fits the interior of the box and reaches to the front. This inside cover is divided into four or more longitudinal strips or fingers; each finger is held from the top by a pin, the head of which rests on a cross bar through which it passes or plays freely, which bar is raised or lowered by a large screw passing through an opening in the full top and having its thread in gearing in a brace. Each pin is surrounded by a loose india-rubber ring, and regulates the pressure of the cork without regard to its uneven thickness or rough surface, when operated upon by the screw. There are in each feeding box six grooved cylinders;” these protrude into the interior of the box about the depth of the grooves,” and when moved take hold of the cork and press it towards the front, “only sufficiently to take off such shaving as may be required.” The top and bottom cylinders are worked by gearing on the side cylinders, to which are attached worm wheels which are actuated by worms set on shafts working in bearings above the feeding boxes, the shafts deriving motion by means of a ratchet wheel on the end of each shaft at the back of the boxes, each ratchet wheel being turned by means of a pall every time the pall arrives with its box to one side or other of the machine, the pall then coming in contact with an upright projecting bar bolted on to the rear standards or frame.”

[Printed, 4d. No Drawings.]

A.D. 1862, April 3.—N^o 950.

HASSALL, HENRY THOMAS, and BURKE, MICHAEL.—“Improvements in reclining or invalids’ chairs, and in swinging or ‘ships’ chairs.” In the former the back and seat are jointed

together, the horizontal part of the arms to the back, and the front uprights to the horizontal parts and to the front of the seat; the uprights are continued downwards and the foot rest is jointed to them. A fixed frame, strengthened at front and back by stays, supports the above, being jointed to the back and uprights about midway between the arms and seat. In swinging or ships' chairs the connection of the moving parts to the fixed frame is effected at two points, one at the back of the seat, the other at the front. The back part is suspended by an arm turning upon a pin near the top of an upright; in front the seat has fixed to it a "nearly semicircular plate." As the chair swings, the plate travels on rollers "situated in a plate," secured to the fixed frame and "having nearly the same curvature" as the upper one; it is guided in its motion by ears "on either side" of the lower plate. "A small bolt on the top of the side of the frame" enables the chair to be fixed in any position. The chair may be arranged, if required, to take "the backward and forward positions" of the reclining chair. In rocking chairs the seat is supported at each side by a rod which is jointed to the fixed frame near the bottom; it rests at front and back on bent springs fastened at one end to its under side and at the other to pins on the frame.

[Printed, 8d. Drawing.]

A.D. 1862, April 8.—N^o 994.

WHITEHOUSE, JOHN.—"Improvements in the manufacture of metallic door and other knobs, and the ornaments of the pillars of metallic bedsteads and other articles of like manufacture, and in attaching metallic mounts to china or earthenware knobs and ornaments and roses for knobs." First improvement, "metallic door and other knobs:—" The neck is made "from sheet metal by first raising a disc of brass or other metal into a cup-like form by means of dies and pressure." A socket, having in its axis a square hole or a cylindrical hole with a concave screw cut therein, is placed in the cup, and the process of spinning forces the metal into close contact with the socket and gives the required shape to the neck; a groove is then formed in the edge of the neck, and the metal at the bottom is perforated. "The position of the socket may be more effectually secured by means of soldering after the cup has been spun upon it." Or the neck may be first shaped by spinning, and

the socket afterwards cast in the bottom thereof; in casting the socket from "zinc or other easily fused metal or alloy," a square or screwed temporary rod must be supported in the neck whilst the metal is poured in. Or the neck may be made in two pieces soldered together. In small knobs the socket is dispensed with, and the spindle is fixed in the neck by pouring in melted zinc, &c. The neck is secured to the body "in the usual way." Second, "ornaments of the pillars of metallic bedsteads," &c. :—These may be made "in one piece, or in two or more parts;" the parts are raised from sheet metal "by the processes of stamping or pressing and spinning;" they are connected "by inserting the edge of one part in a groove formed in the edge of the other part to which it is to be joined and closing the groove by pressure." When the ornaments are made in more than two pieces, the patentee prefers to join them in the method described in the Specification of the Letters Patent granted to him, bearing date April 20th, 1861, No. 978. The socket may be fixed or formed in either of the ways described with respect to knobs. Third, "attaching metallic mounts to china or earthenware knobs," &c. :—The mount is inserted in the hole in the knob, and a square or screwed spindle, "hollow and closed at bottom," is placed in the hole of the mount; both mount and spindle have holes through them on opposite sides; the spindle is let in until the holes coincide; when the melted metal has been poured in and "has solidified," the spindle is withdrawn, and during the withdrawal "the cast metal is cut off at the holes," or a thread is "cut in the soft metal in the said holes." When the spindle is to be permanently fixed in the knob, a mount, having a hole in its bottom, is fastened to the end of the spindle and placed in the hollow of the knob. A get encircles the spindle; it has a small hole, which, when the get is in position, coincides with the hole in the mount; the melted metal, passing through the holes into the hollow of the knob, fixes the mount and spindle to the knob. "When the metal has solidified, the get is turned upon the spindle so as to cut off the metal in the hole in the get from that in the mount." To attach metallic mounts to "knobs of hat pegs or hooks," a screw mount is placed over the recess in the knob; in the mount "the contracted end" of a hollow rod is put; fused metal is poured down the hollow until the recess and a part of the mount are filled therewith; "by turning the rod the metal is cut off flush from the end of

together, the horizontal part of the arms to the back, and the front uprights to the horizontal parts and to the front of the seat; the uprights are continued downwards and the foot rest is jointed to them. A fixed frame, strengthened at front and back by stays, supports the above, being jointed to the back and uprights about midway between the arms and seat. In swinging or ships' chairs the connection of the moving parts to the fixed frame is effected at two points, one at the back of the seat, the other at the front. The back part is suspended by an arm turning upon a pin near the top of an upright; in front the seat has fixed to it a "nearly semicircular plate." As the chair swings, the plate travels on rollers "situated in a plate," secured to the fixed frame and "having nearly the same curvature" as the upper one; it is guided in its motion by ears "on either side" of the lower plate. "A small bolt on the top of the side of the frame" enables the chair to be fixed in any position. The chair may be arranged, if required, to take "the backward and forward positions" of the reclining chair. In rocking chairs the seat is supported at each side by a rod which is jointed to the fixed frame near the bottom; it rests at front and back on bent springs fastened at one end to its under side and at the other to pins on the frame.

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WHITEHOUSE, JOHN.—"Improvements in the manufacture of metallic door and other knobs, and the ornaments of the pillars of metallic bedsteads and other articles of like manufacture, and in attaching metallic mounts to china or earthenware knobs and ornaments and roses for knobs." First improvement, "metallic door and other knobs:—" The neck is made "from sheet metal by first raising a disc of brass or other metal into a cup-like form by means of dies and pressure." A socket, having in its axis a square hole or a cylindrical hole with a concave screw cut therein, is placed in the cup, and the process of spinning forces the metal into close contact with the socket and gives the required shape to the neck; a groove is then formed in the edge of the neck, and the metal at the bottom is perforated. "The position of the socket may be more effectually secured by means of soldering after the cup has been spun upon it." Or the neck may be first shaped by spinning, and

the socket afterwards cast in the bottom thereof; in casting the socket from "zinc or other easily fused metal or alloy," a square or screwed temporary rod must be supported in the neck whilst the metal is poured in. Or the neck may be made in two pieces soldered together. In small knobs the socket is dispensed with, and the spindle is fixed in the neck by pouring in melted zinc, &c. The neck is secured to the body "in the usual way."

Second, "ornaments of the pillars of metallic bedsteads," &c.:—These may be made "in one piece, or in two or more parts;" the parts are raised from sheet metal "by the processes of stamping or pressing and spinning;" they are connected "by inserting the edge of one part in a groove formed in the edge of the other part to which it is to be joined and closing the groove by pressure." When the ornaments are made in more than two pieces, the patentee prefers to join them in the method described in the Specification of the Letters Patent granted to him, bearing date April 20th, 1861, No. 978. The socket may be fixed or formed in either of the ways described with respect to knobs. Third, "attaching metallic mounts to china or earthenware knobs," &c.:—The mount is inserted in the hole in the knob, and a square or screwed spindle, "hollow and closed at bottom," is placed in the hole of the mount; both mount and spindle have holes through them on opposite sides; the spindle is let in until the holes coincide; when the melted metal has been poured in and "has solidified," the spindle is withdrawn, and during the withdrawal "the cast metal is cut off at the holes," or a thread is "cut in the soft metal in the said holes." When the spindle is to be permanently fixed in the knob, a mount, having a hole in its bottom, is fastened to the end of the spindle and placed in the hollow of the knob. A get encircles the spindle; it has a small hole, which, when the get is in position, coincides with the hole in the mount; the melted metal, passing through the holes into the hollow of the knob, fixes the mount and spindle to the knob. "When the metal has solidified, the get is turned upon the spindle so as to cut off the metal in the hole in the get from that in the mount." To attach metallic mounts to "knobs of hat pegs or hooks," a screw mount is placed over the recess in the knob; in the mount "the contracted end" of a hollow rod is put; fused metal is poured down the hollow until the recess and a part of the mount are filled therewith; "by turning the rod the metal is cut off flush from the end of

A.D. 1862, May 5.—N° 1325.

WILLIAMS, ALFRED.—“The construction of a backed form
 “ or seat capable of being converted into a level table with seat,
 “ or a desk, either level or sloping, or at any angle.” An iron
 standard consisting of two uprights is connected by horizontal
 plates. “At the upper front corner a tenon is inserted and
 “ secured by a pivot in the mortice of the other portion of the
 “ standard to which is attached the board to form the back. A
 level table is obtained by raising the board “and turning it for-
 “ ward upon the joint formed by the mortice and tenon;” it will
 be held in any sloping position if “secured by a screw through the
 “ cheek of the mortice to be turned forward against the tenon.”
 The seat consists of a board fastened “down upon the horizontal
 “ plates.”

[Printed, 4d. No Drawings.]

A.D. 1862, May 9.—N° 1388.

McILROY, THOMAS.—(*Provisional protection only.*)—“An im-
 “ proved invalid bedstead.” The frame is hinged “at about one-
 “ third of the length from the head.” A shaft, turned by a
 handle and carrying two cog wheels, “runs across the bedstead.”
 Two segments, one on each side of the lifting part of the frame,
 work in the cog wheels; there is a ratchet wheel on the shaft and
 a pawl on the bed rail. A pulley is mounted in a bearing on the
 top part of the bedstead and another on the lifting part; a cord
 fastened thereto enables the invalid to raise this part to any desired
 height.

[Printed, 4d. No Drawings.]

A.D. 1862, May 14.—N° 1451.

JOUBERT, HENRI CHARLES RENÉ.—(*Provisional protection
 only.*)—“Improvements in raising music chairs, stools, or seats.”
 Vertical racks are fixed to the seat; in the frame below there is a
 catch to each rack; by pressing a knob the catches open and the
 seat can be adjusted to any height.

[Printed, 4d. No Drawings.]

A.D. 1862, May 19.—N° 1512.

KIRKMAN, FENTON CHARLES, and SWIFT, RICHARD.—(*Pro-
 visional protection only.*)—“A new and improved joint for seating

"or fixing posts and rails of bedsteads and other articles of furniture, posts and rails in fencing, in the construction of framework for conservatories, emigrants' and other portable houses." The patentees describe their invention "as applicable to posts and rails of a metallic or wood bedstead." To the corner post is fixed by casting, welding, or other means, "a wrought or cast hollow metal block," in which are formed mortises or sockets "proceeding from the sides of the block at right angles one with the other, as the case may be, and downward from the top, of a form precisely similar to that of the tenon to be inserted." The side and end rails are formed at their extremities in such a manner "that they will lap one over the other," and they are punched or drilled with a hole "to pass over a T-shaped bolt or pin, which is securely fixed in the hollow metal block by the T or head, the bolt end standing upward." When the rails are placed in their respective positions a nut, connected to "the upper portion of the post," is screwed on to the bolt. The securing of the rails may be effected "by means of a bayonet groove or grooves in the upper part of the post," to pass over studs on the bolt. In some instances, the upper part of the post may be secured to the T bolt "by means of a split or other cotter or wedge passed through holes" made in the post and bolt. Another method is "by splitting the angle or T-iron and turning up the top member and shaping the same to the form of the pillar." The tenon ends "are passed horizontally into the mortice holes, and the turned up ends brought in contact with the pillar," and a "loose moulded ring of wrought iron or other metal" is slid down the pillar and over the turned up ends, "and either screwed or wedged in its position." Sometimes an ornamental knob or nut is added.

[Printed, 4d. No Drawings.]

A.D. 1862, May 30.—N^o 1629.

MORRISON, JOHN.—(*Provisional protection only.*)—"Improvements in the construction of springs suitable for ladies' dresses or crinolines, and for chair, sofa, and other seatings, as well as for bedstead and couch sackings." This invention "consists in twisting, coiling, or spinning flat strips or ribbons of steel of any width into a hollow archimedean screw or spiral tube, and applying the same, when hardened and tempered, to the purposes designated in the title," obtaining thereby "universal

“ elasticity ” in every direction. In some instances, before coiling or twisting, it will be better to render the strips by rolling or otherwise “ concave or hollow across their width, on that side intended to be inside in the finished spring.”

[Printed, 4d. No Drawings.]

A.D. 1862, June 2.—N° 1661.

KEY, JOHN, and POTTS, FERDINAND.—“ Certain means of producing designs in iron, and in the application of the same, or designs formed in like manner of other metals, to the manufacturing and ornamenting of bedsteads and other metal articles of furniture.” The patentees, having discovered “ that precious and alloyed metals have been ornamented by the process of rolling,” restrict the operation of their invention to iron. Designs are cut on the periphery of finishing rollers; and when “ rods, bars, or strips, of any section ” have been reduced to nearly the shape required, they are passed while hot, or after they have been again heated, between the finishing rollers, and come forth with the design “ reversely transmitted ” to them. The patentees do not limit themselves to the use of one pair of such rollers; they describe the rollers required, and the process of rolling iron, whether solid, tubular, or taper.

[Printed, 10d. Drawing.]

A.D. 1862, June 11.—N° 1742.

JOHNSON, JOHN HENRY. — (*A communication from Hans Nannestad.*)—(*Provisional protection only.*)—“ Improvements in “ cradles or swing cots,” whereby they are rendered “ self-oscillating.” To one or both of the standards “ a clock mechanism ” is applied, consisting of a barrel spring, “ which imparts motion to a revolving eccentric pin, through a pair of spur wheels.” The pin works in a slot “ in an escapement lever,” which sets the cradle in motion as soon as the spring is wound up. Provision is made for disengaging the mechanism, and a stop or pin is used for stopping the oscillation when required.

[Printed, 4d. No Drawings.]

A.D. 1862, June 12.—N° 1753.

GEORGE, BENJAMIN.—“ Improvements in the construction of “ portable beds, bolsters, pillows, and sofa and other cushions,”

so that they may serve "as life-preservers in cases of shipwreck." The tick or cover is made with "flat bottom and top surfaces, "and wall sides;" it is open at the ends and at one of the sides; when closed, it is "buttoned with flaps over the openings." In it are placed waterproof and air-tight tubes closed at one end, and having at the other an orifice, in which is secured a short branch tube provided with a metal cock. At the outer end of each branch tube is "a male screw or union," whereby it is fitted into one of the branches of a metal feed pipe; this pipe "is "stopped at each end by a moveable stopper or mount." The tubes are inflated by a pair of bellows from either end of the feed pipe; they are kept in position by straps of cloth or other substance permanently fixed to the tick at one end and provided with button-holes at the other. A string is fastened to each end of each tube, so that when required they may be tied round the body.

[Printed, 10d. Drawing.]

A.D. 1862, June 20.—N^o 1824.

OSMAN, CHARLES.—(*Provisional protection only.*)—"Improvements in the manufacture of elastic or yielding surfaces for "sitting, lying, or reclining upon, part of which improvements "are applicable to other purposes." The first part of the invention consists in manufacturing "cellular surfaces of vulcanized "india-rubber;" tubes of india-rubber, arranged side by side on "a suitable surface," and of "straight, ziz-zag, or other form," may be used instead. The surfaces or edges are "slit, perforated, "or partially divided," to increase the yielding power. The second part, in forming elastic surfaces "from sheets, strips, or "lengths of vulcanized india-rubber made up into twisted, spiral, "corrugated, or undulating forms;" or "by connecting the "upper or lower ends, or both, of a series of lever arms," by means of bands of rubber; the arms may be retained in position by helical or other springs. The third part, "in forming or "manufacturing corrugated or channelled surfaces of vulcanized "india-rubber."

[Printed, 4d. No Drawings.]

A.D. 1862, July 7.—N^o 1959.

BOOTH, JOHN PETER.—(*Provisional protection only.*)—"Improvements in the manufacture of feather beds, quilts, bolsters,

"and pillows." In beds the inner surface of the tick is lined with cotton or other wadding which is secured by quilting. The feathers are placed within the wadded case which is then closed by stitching. In bolsters and pillows also the case is lined with wadding; by such arrangement, the feathers will not work out of the case. In quilts one side of the cover is overspread with wadding; an even layer of down, feathers, or feather strips, is placed thereon; then a second layer of wadding; and on the top the fabric which is to complete the cover; the whole is secured by quilting.

[Printed, 4d. No Drawings.]

A.D. 1862, July 14.—N° 2022.

MAY, WILLIAM GLADSTONE.—(*Provisional protection only.*)—"Improvements in apparatus for extending tables." The apparatus consists of a series of jointed bars "known as the lazy-tongs movement." The ends of the movement are jointed to bracket pieces fixed each to an end of the table frame. The expansion or contraction is effected by means of a hand lever attached to one of the bars and worked from one side of the table.

[Printed, 4d. No Drawings.]

A.D. 1862, July 22.—N° 2080.

FOURNIER, AUGUSTE.—"Improvements in the manufacture of easy chairs, seats for railway and other carriages, and other kinds of seats and mattresses." The patentee thus describes his invention:—"I place, instead of the ordinary webbing, bands of vulcanized india-rubber across the frame of the chair or other seat or mattress, vertically and horizontally interlacing them, and fixing them to the framework." The article is stuffed in the ordinary manner. The foundation of chair backs is similarly constructed.

[Printed, 4d. No Drawings.]

A.D. 1862, July 30.—N° 2167.

NORMAN, WILLIAM.—"Improvements in tables and drawers or other such sliding receptacles." In tables metal bars are fixed to the outside sliders; these bars carry metal clips which extend over metal bars fixed to the middle sliders; the middle bars also carry clips which embrace the bars of the outside sliders.

The woodwork is grooved to admit the ends of the clips and to bring the sliders closer together. The same principle is carried out when more sliders are used. In drawers or shelves metal bars are fixed to the sides; the bars are "situate within metal clips," which are "fixed to the carcase" and "carry the whole weight."

[Printed, 10d. Drawing.]

A.D. 1862, August 13.—N° 2271.

BOYLE, WILLIAM LAFFERTY.—"Improvements in the construction of chairs and footstools for the use of dentists, and in chairs, couches, and beds for invalids." The chair back is hinged to the frame at or near its lower end and fastened to the arms by straps or chains. Extending across the back is a shaft to which one end of the straps is secured; the shaft carries a coiled spring and a ratchet wheel whose spring pawl has its outer end projecting from the back of the chair. The head rest is attached by two hinges through which a bolt passes; the bolt has at one end a feather which slides through a groove in the upper half of the hinge next to it; at the other end is an adjustable screw button. In the lower half of the hinge are notches into any one of which the feather enters and is retained there by a spring coiled round the bolt and compressed between the hinge and a pin on the bolt. This arrangement allows of a lateral movement to the head rest while its inclination is being adjusted. The seat box slides up and down within the chair frame; it is carried at front and back by levers pinned at top to the box and at bottom to "two travelling bars or screw boxes;" radius rods are jointed, one to the middle of each lever and the chair frame or to a cross bar. A shaft, one half cut with a right, the other with a left-handed screw, passing through the cross bars and screw boxes, turns in bearings on the frame; by this motion the screw boxes recede or approach, and "the seat will be caused to rise or fall in a perfectly vertical line." A spittoon can be attached to the chair; it is placed at the end of a frame mounted on a bracket which may have a folding joint. An india-rubber pipe leads from the spittoon to a vessel under the chair. A footstool is composed of "two halves of a box sliding one within the other;" the upper, resting on helical springs, has hinged to it a cover which is held at any inclination by a spring catch and rack. The

height of the stool is adjusted by pulling a cord tied to two levers whose fulcra are carried by brackets inside the upper half, while the racks into which the lower ends of the levers take are fixed inside the lower half. The upper part of the chair is cut away and the legs are curved behind, "to enable the operator to get closer to the patient."

[Printed, 10d. Drawing.]

A.D. 1862, August 14.—N° 2282.

KEY, JOHN, and HOSKINS, EBENEZER.—(*Provisional protection only.*)—"An improvement or improvements in the manufacture of plain and ornamental metallic pillars for bedsteads, cots, couches, tables, and other like purposes." A core is made by placing "a rod or tube of iron or a plain pillar" in a mould "made in two or more pieces," and pouring round it plaster of Paris or other composition which will set hard. This core is then placed in another mould and melted metal is poured in. "A hollow metallic pillar, having the same ornamental figure as the interior of the outer mould, is thus produced."

[Printed, 4d. No Drawings.]

A.D. 1862, August 14.—N° 2292.

HEARN, JAMES.—"Improvements in apparatus or appliances for raising sick or bedridden persons in their beds, and for lifting their bed clothes." The apparatus is composed of, 1, four uprights supporting a horizontal frame, all tied by cross bars and diagonal stays; 2, a stretcher frame sliding on the uprights and suspended by cords which pass over pulleys on the horizontal frame and thence round pulleys down to a lever frame—this frame is mounted on fulcra in the uprights and is furnished with toothed quadrants and pawls—and, 3, belts (whereby "the patient is slung to the frame") looped to pins on the stretcher frame. The stretcher "is kept rigid in its breadth" by cross bars, one of which is of curved iron to provide room for elevating the patient's head and shoulders. The stretcher may be omitted and the belts be looped to hooks on the ends of the cords; in this case two extra cords are placed near the head, "separately attached to a hand hold." This contrivance for lifting the head may be added to the first arrangement, if the stretcher frame "be jointed in its length."

[Printed, 8d. Drawing.]

A.D. 1862, August 16.—N° 2309.

KNOWLES, THOMAS, and ROBINSON, WILLIAM.—(*Provisional protection only.*)—"Improvements in racks for window blinds." To adjust the blind cord to the "requisite place and tightness," an endless elastic band of vulcanized india-rubber or other suitable material is employed; it passes "over the ordinary roller knob and a stud sliding in the groove of the rack in the usual manner," so that when the knob and stud are adjusted to the proper place and position, according to the length of the cord, it "gives an additional spring or elasticity to allow of knots, snarls, or other irregularities that may occur in the cord." The band may be used "either inside or outside the rack, as may be found most desirable."

[Printed, 4d. No Drawings.]

A.D. 1862, September 24.—N° 2609.

UPFILL, WILLIAM, and ASBURY, WILLIAM.—"Improvements in the manufacture of metallic bedsteads, part of which improvements are also applicable for ornamenting tubes, and curtain and cornice poles." The dovetail ends of the side and end rails are of wrought iron. The sockets on the corner pieces are partly of wrought and partly of cast iron. Wrought iron plates "of suitable thickness and of the proper shape to form the top and bottom of the socketted corner pieces" are placed in moulds and "solid corner pieces are cast on to them." Tubes, pillars, and cornice poles of wood or iron are ornamented by covering them with paint, japan, or colored or embossed paper, and enclosing them in tubes of "perforated metal cut or punched out with any device." Where great strength is not required, the inner tube or rod may be omitted, and the perforated tube be lined with colored paper. The corner pieces are cast on to the pillar and covered with "a brass or other ornamental plinth or moulding." The ends of the pillars, &c. also are provided with ornamental mouldings.

[Printed, 10d. Drawing.]

A.D. 1862, September 25.—N° 2612.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Victor Wéry.*)—"Improvements in the construction of chair settees." The mechanism and action whereby the chair is con-

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vertible into a settee is of the following description :—On each side of the chair frame is a standard ; on a centre pivot therein is mounted a bar fitted at top with a toothed segment—a spring catch works in the teeth—to the bottom of the bar is jointed a tie rod whose other extremity is jointed to “tablets;” these when raised constitute the lower portion of the settee. The bar is united to the chair back by a rod. The seat board “is fitted “with hinges;” on the under side of its hinder part is a spring “serving as a counterpoise to raise the back of the chair, and “throw into position the tablets.” Another tie rod descends from the front cross bar of the chair to the lowest tablet. Mounted on the chair back and giving motion to the seat board is a curved piece having a roller at the top of the curve. An iron rod is hinged at bottom to the back, and at top to a lever by which a circle is raised “serving as cushion and secured to the back at “each side of the chair” by hinges. To form a settee the sitter presses the spring catch and leans back.

[Printed, 8d. Drawing.]

A.D. 1862, September 25.—N^o 2621.

TAUNTON, JOHN RICHARD CROMWELL.—(*Provisional protection only.*)—“Improvements in the manufacture of metallic “bedsteads, cots, and couches.” The foot rails are formed “with “a graceful sweep, curve, or other ornamental line.” If a solid foot frame is required, it is made of sheet metal japanned and ornamented. A modification consists “in employing this curved “foot rail in addition to the ordinary rectangular frame.” The side rails also may be curved.

[Printed, 4d. No Drawings.]

A.D. 1862, October 15.—N^o 2777.

WILSON, WILLIAM.—“An improved oblong drawing-room “bagatelle and billiard table with reversible top, and made in “various shapes and sizes.” The table top is so constructed that “the game is on one side;” this side “has a channel or “rim” all round “for the balls to run in,” and at one end “a “double or single indicator” made moveable “to direct the “balls.” The top when reversed forms a drawing-room table. “The stand is made with a frame or rim for the game to be enclosed in, supported on a pillar and claws or otherwise.”

[Printed, 6d. Drawing.]

A.D. 1862, October 22.—N° 2848.

FEARN, THOMAS.—“Improvements in the manufacture of rods, poles, tubes, and other forms employed in the construction of various articles of furniture, and for other similar purposes.” A base of metal, wood, paper, or other material, either tubular or solid, is japanned, enamelled, or otherwise decorated; a strip of “brass or gilding metal” is then coiled round it, so that a portion of the surface may be exposed; or the base may be left rough, and the strip, “ornamented with an embossed or engraved enrichment,” be coiled closely round it.

[Printed, 4d. No Drawings.]

A.D. 1862, October 27.—N° 2886.

JOUBERT, HENRI CHARLES RÉNÉ.—“An improved method of raising and fixing at any height desired music stools, chairs, or seats.” Provisional protection for this invention was granted to the patentee, 14 May 1862, N° 1451. In the drawing annexed to the Specification four vertical racks descend, one into each leg. On the frame below the seat is “a parallel,” whose sides catch in the teeth of the racks; a spring keeps the parallel open. The end of one side of the parallel passes through the frame; at its extremity is a knob, by pressing which the parallel is closed and the racks are released. There is a spring in the upper part “to raise the seat so as to release the first notch, it being square.”

[Printed, 10d. Drawings.]

A.D. 1862, October 31.—N° 2939.

DICKINSON, GEORGE, and COOKE, EDWARD.—“Improvements in the construction and ornamentation of metallic bedsteads, couches, and children’s cots.” The corner block of the pillar is “a ring or annular shoulder” having on its edge “a vertical rim” that extends partly round it; above the ring the pillar is threaded and provided with a screw nut. The ends of each side rail are bent at a right angle; the bent parts are riveted to the end rails. A portion of each bent part is curved and placed within the rim, and the nut is screwed down. The portion of the pillar above the ring may be plain, and a pin, pushed through a hole therein, will bear on the top of the bent part and secure it; the bent parts may be made separately and riveted to the ends of

the rails. The ornamentation is effected by fixing in panels and other parts of bedsteads pieces of glass "cut or moulded on one" or both sides into the form of a series of prisms or crossed "prisms or other figures."

[Printed, 8d. Drawing.]

A.D. 1862, November 3.—N^o 2965.

GONEZ, LOUIS. — "A seat or chair, forming also a travelling bag for the use of travellers by rail or other way." The object of this invention is "to provide persons travelling usually by third-class or other conveyance affording little comfort or accommodation" with a "portable apparatus forming, according to the exigencies of the moment, a comfortable seat, or chair, or couch," and having "a pocket with compartments" in which "necessaries for travelling may be packed." The iron frame, which is covered with cushions, is divided into three parts, "the seat, properly so called, the back, and the upper part of the back." The parts are united by joints; the seat and the back "by square or compass-headed hinges," the branches of which extend about "two inches in one direction and about one in the other." Spiral springs, having their ends fastened to cross rods or bars, assist the upper part of the back "in moving either in a vertical or a horizontal direction." Cross bars "are placed at certain distances to keep the sides apart, and at the same time to serve as cushion support and spring," and cross rods are soldered at their ends to the compass hinges "to keep the parts rigid." A hook or clasp "serves to close the whole apparatus, which then assumes the form of a travelling bag;" the pocket is fitted "against the back." The wire which the patentee prefers to use for the frame is about " $\frac{1}{8}$ of an inch in diameter;" the seat and back he recommends to be "about 16 inches by 18," and the length of the upper part "about 6 inches." He makes another "less complicated" and "less luxurious, but also cheaper:"—The frame is of wood, in two parts, united by a single joint and folding "outwards, that is to say, back to back;" uprights "are joined to the back to support the cushions." The dimensions of the seat and back, the arrangement of the pocket, and the method of closing are the same as before.

[Printed, 10d. Drawing.]

A.D. 1862, November 3.—N° 2969.

CLARK, WILLIAM.—(*A communication from Ursule Antoinette Chapelon Burdet and Auguste Pinaire.*)—"Improvements in "castors, and in the manufacture of the same." The socket is made "with a bottom or disc, disposed about or below the "middle of its depth;" from the middle of the disc rises a tube for the reception of the centre pin, which is fixed in the plate of the horns; this plate turns freely in the bottom of the socket, and between it and the disc are friction rollers, "mounted "on a sort of star-piece or series of radial arms fitted on the "centre pin," each arm forming an axis for one roller. In fixing the castor the tube "passes to a greater or less length up "the centre of the leg," and may or not be employed as an additional fixing; in this castor the wheel "may also be disposed "more immediately underneath the table leg." The socket may vary in shape to suit the article of furniture; sometimes a square plate is substituted for the upper portion; the wheel may be of any solid substance. To lessen the cost of production most of the parts are cut or stamped out; 1, the socket (formed of a piece of tubing) is stamped in dies "so as to give it the necessary taper "and to throw up a bead at the upper edge;" 2, the disc is punched out of a plate; it has the tube fixed in it, and a hole through which the centre pin passes; it is secured in the socket "by compression of the socket and disc in dies or stampers;" 3, the friction rollers (four, five, six, or more in number) are punched out of a sheet of iron plate; the punchings are so arranged "that the star-piece may be punched or cut out of the "same blank;" 4, the horns and plate are punched out "in one "piece from a sheet of metal in a suitable form, so that it may "be afterwards bent and otherwise formed by stamping in "suitable dies."

[Printed, 1s. Drawings.]

A.D. 1862, November 3.—N° 2970.

CLARK, THOMAS OFFEN.—(*A communication from Joseph Moiroux.*)—"An improved portable spring bottom bedstead." The framework is by preference of iron; the side rails are jointed in the middle and to the head and foot frames; they have recesses or equivalents on the inside, into which the laths or stretchers drop. The raised ends are mounted on fulcrum pins which move

in slots "in the cheek pieces;" they are also furnished with pins which drop into recesses and keep them upright when raised. The legs are jointed to the frame, and additional castors are fitted to the cross bars, that when the legs are folded "the bedstead may " be used at a lower elevation," or moved about when collapsed; webbing is attached to the head and foot and united by cross webbing. The webbing is supported by spring frames of the following description:—A rectangular frame of strong wire is jointed to a raised part formed on each lath; this part is recessed for the admission of the wire and "the doubles" of india-rubber springs which pass round the wire. The frame is held in position by screw heads, "but so as to permit its free hinge motion;" on the opposite or upper side of the frame is placed "a wooden quill " or boss," which at each end is encircled by and acts as a fulcrum to an upper wire frame; the lower side of this upper frame carries a wooden quill, round which are "the opposite end doubles" of the springs; the upper side is expanded into loops which are sewn to "two adjoining longitudinal webbings;" spiral metal springs may be used instead of rubber springs. "To facilitate collapsing "this bedstead" two cords are run through the laths, one near each end, so that "when the laths are all lifted from their "sockets" they can be readily pulled together.

[Printed, 1s. 2d. Drawings.]

A.D. 1862, November 4.—N^o 2975.

FRANCIS, JOHN BLINSTON.—(*Provisional protection only*).—"Improvements in apparatus for raising and lowering window "blinds, maps, and other articles, and for retaining them in "position." The guide pulleys are mounted "in a lever or levers "jointed to a box or frame;" the cords, by which the blinds, &c. are raised and lowered, "after passing over the guide pulleys "pass between the tail end of the levers and the inside of the "box or frame;" and to the tail end "is also attached a check "cord." After the blind has been raised to the required height, it is held in position "by the weight thereof binding the cords "between the tail end of the levers and the frame." In lowering the blind "the check cord has to be depressed to allow the cords "to pass between the tail ends of the levers and the frame."

[Printed, 4d. No Drawings.]

A.D 1862, November 10.—N° 3029.

HOLMES, RICHARD RIVINGTON.—“Improvements in folding “chairs and seats.” On each side of the seat are two bars connected by a pin joint and crossing each other at a point above the seat. The shorter bars, forming hind legs, terminate at top in elbows; the seat is pin-jointed to these bars. The longer bars, forming front legs, carry the back, “which it is preferred should “turn on a neck or axis and have a certain degree of play,” the play being limited by a stop at each end. Under the seat near each side is a rack, and “on the upper edge” of a bar which unites the front legs “are two small legs of metal” which enter the notches of the racks. India-rubber springs draw the legs together when the chair is folded. A seat “suitable for being “used in churches” is provided at the back with a hinged “hook “board.” The seat is hinged to a bar which connects the hind legs, and the back is hinged at bottom to the seat. “The seat “has projecting from each of its ends a pin;” these enter grooves in the front legs.

[Printed, 10d. Drawing.]

A.D. 1862, November 13.—N° 3057.

SLACK, JAMES.—“Improvements in nursery swings and cots:” also in swing beds “and other similar articles for nursery, house, “or other use,” whereby the same are rendered “self-acting or “capable of maintaining the motion imparted to them for a considerable time.” The invention is described in the arrangement of a swin g chair. There are two standards or side frames “with transverse or cross tie pieces at top or bottom, or both,” and from the tops of these a chair is suspended by slings, “in or upon “which the seat can be raised or lowered and fixed as desired, in “order to obtain the necessary equilibrium;” a safety strap is attached to the chair. To the tops of the slings is fixed “an “arched or otherwise formed head so as to oscillate with the “slings,” and at the top of the head is a weight “to counter-“balance the occupant of the swing,” provided with a screw stem and handle for adjustment. “The centres of support and oscillation” are formed “upon the knife edge and link or scale beam “principle.” Short elastic springs are placed on each side between the head and the standard tops, and elastic ties between the lower parts of the chair and standards “for regulating the oscillation of

"the seat." Modifications.—The head and slings can be formed in "one piece, or in several parts, and fitted together." When the tops of the standards are connected by a crosshead piece, the slings are formed "with an eye at each side through which the crosshead passes;" or if there is not a crosshead, they may be hung "upon two short studs or pivots" fixed to the standards; again the studs may project from the slings and fit into recesses in the standards. Both standards and slings may carry studs with a vertical slot in each, and in each slot may be fixed "by a pin rivet" or screw a short length of flat steel hoop or spring;" or the slings may be connected in like manner to a crosshead piece. The weight may be fixed upon or suspended from an arm or arms projecting from the slings laterally at any desired angle, and the arms may be made "to elongate." The patentee proposes to obtain the motive power for giving the first impetus to his swing "from a coiled or other spring or weight operating through a suitable train of ordinary wheelwork in connection with a pendulum, pawl, and ratchet at the centre of oscillation."

[Printed, 8d. Drawing.]

A.D. 1862, December 5.—No 3261.

TILDESLEY, MATTHEW, and SHARPE, EDMUND.—(*Provisional protection only.*)—"Improvements in the manufacture of earthenware knobs and in fixing them; in spindles used with certain kinds of knobs; in securing the metal mounts upon such knobs; and in apparatus to be employed in certain parts of this manufacture." The knobs are moulded in metal moulds lined with plaster of Paris; "the sinking on the back of the knob for the mount and spindle, or for the screw, as the case may be, is formed by employing a plug of fired earthenware surrounded by plaster of Paris, the plaster being protected at the bottom by the form of the plug which resembles a piston with its rod covered with plaster;" the sinking is by preference made square in section. The hole for the metal, which is intended to secure the mount or screw in the knob, is pierced by "a peculiar instrument formed similarly to a pair of glove stretchers with a horizontal pin or stud upon the end of each limb; the tool when closed will pass into the sinking for the mount; pressure by the hand then forces the pins or studs laterally into the clay." The knobs, when moulded, sunk, and pierced,

are "glazed and fired by the ordinary process." In knobs intended for drawers or cupboards "a male screw or plain plug, "tapped to receive another screw inserted from the back" of the drawer or door, is substituted for the mount. The knobs and mounts or screws are fastened together by running an alloy of metal into the holes; "this alloy consists of about two and a half per cent. by preference of regulus of antimony, about the same proportion of tin, the remainder being lead." The spindles are grooved on all four sides throughout their length "by rolling the iron in suitable rolls to any necessary length, and then cutting "up the rod thus produced into lengths for each spindle."

[Printed, 4d. No Drawings.]

A.D. 1862, December 5.—N° 3269.

GALLETTI, CHARLES, and STEFANO, FRANCO.—(*Provisional protection only.*)—"Improvements in articles of furniture," namely, in "a combination of parts" which may be converted into a table (by preference a dining-table) or a whatnot. "The several stages or trays of the whatnot correspond with the leaves or flaps that form the table." One end is supported on two feet; in this is placed a drawer forming the lower shelf of the whatnot. The flaps are connected by rods jointed thereto, and arranged to serve either as side rails of the table or uprights of the whatnot. "Suitable legs are fixed to one of the shelves to support the other end;" these when raised come up behind the whatnot. The parts are secured (when forming a whatnot) "by a locking action."

[Printed, 4d. No Drawings.]

A.D. 1862, December 10.—N° 3309.

TAUNTON, JOHN RICHARD CROMWELL.—(*Provisional protection only.*)—"Improvements in the manufacture and ornamentation of metallic bedsteads and other articles of like manufacture." The pillar, leg, and corner block (without the dovetail socket) are cast in one piece, the casting being hollow. The ends are cast closed or open, and top and bottom mounts are cast on afterwards. To cast the socket hollows are made in the corner block "of such a figure that metal cast in them will be fixed therein;" or "projections having heads" may be employed instead of hollows. Over them are placed chills or iron moulds, having

internally the figure of the socket, and melted iron is poured in. The pillar and leg may be cast separately and "united by common" chilled or malleable iron corner blocks." Pillars and legs may be cast each in several portions which are joined by "chilled" mounts or bands." At the parts to be ornamented rivets or headed screws are inserted, or holes are bored; when the ornaments are cast upon these parts they are fixed by being cast upon the heads of the rivets or screws, or by a portion of the melted metal running through the holes and forming heads on the other side. Or the ornaments may be made separately and fixed by rivets or by casting in chills.

[Printed, 4d. No Drawings.]

A.D. 1862, December 10.—N° 3310.

WHITFIELD, SAMUEL BENJAMIN.—"Improvements in the" dovetail joints used in metallic bedsteads and other articles of "like manufacture." This invention relates to the making and fixing male dovetails on the ends of rails; they are stamped or forged with a connecting piece and placed in a mould with the rail end; melted cast-iron poured in forms a block upon the connecting piece and the rail end; or a block only may be cast on the rail end, a recess being left in which the connecting piece may be fixed. The dovetail and connecting piece may be made hollow and filled up with cast iron during the casting of the block. Instead of wrought iron malleable or annealed cast iron may be used for the dovetail and connecting piece; and they may be made hollow or solid.

[Printed, 8d. Drawing.]

A.D. 1862, December 17.—N° 3378.

BURTON, HENRY.—(*Provisional protection only.*)—"Improvements in castors for furniture and other purposes." Instead of the customary wheel and horns a globe or ball of brass or other suitable metal or material is employed, "nearly one half of" which protrudes through a circular aperture at the bottom and "centre of the socket." Within the socket is to be placed and fixed by means of screws a circular plate or disc, "underneath" which three or other number of projections in pairs are to be "screwed or fixed, forming bearings for the reception of three" or other number of similar but smaller metal or other balls fur-

"nished with trunnions entering the bearings in the projections, "these balls forming bearing surfaces for the larger ball." The foot of the piece of furniture, &c. is fixed above the disc; and the ball will turn readily "like an universal joint in every "direction."

[Printed, 4d. No Drawings.]

A.D. 1862, December 29.—N° 3460.

KER, MATTHEW.—"An improvement in wardrobes, or other "pieces of furniture or fittings with glass silvered doors or panels "used for toilet purposes." The frieze of the cornice over the door or panel is cut, and sliding frames are inserted, "or other "extending arrangements with a glass frame hung to them on "centres." These frames when closed are concealed behind the frieze; when they are drawn out, the glass frame can be adjusted "to cast the reflection of the observer into the glass door or "panel." Cords and pulleys may be applied to the apparatus for drawing it out and closing it.

[Printed, 4d. No Drawings.]

1863.

A.D. 1863, January 3.—N° 24.

SKULL, EDWIN, and MEALING, EDWIN.—"Improvements in "chairs and other seats or apparatus for sitting or reclining on, "which improvements are also applicable to tables." These chairs, &c. can be "readily folded into a compact form." The legs are two pairs of cross bars pin-jointed to the sides of the seat. The outer legs are slotted, so that the studs (on the inner legs) by which they are united may slide freely up and down; the inner legs are strengthened by cross pieces. The side bars of the back are pin-jointed at bottom to the inner legs, and studs at the top of the outer legs pass through slots in the said bars. If arms are added, the construction is partly varied; the arms are slotted and pin-jointed to the bars of the back; in front, studs on connecting bars slide through the slots. The connecting bars are slotted; and in their descent studs on the outer legs slide in their slots; they turn (lower down) on pins projecting from the inner legs, and

at bottom they have projecting pins, whereon the bottom of the back bars turns. "The surfaces of tables may be connected in like manner to the legs, to facilitate their folding."

[Printed, 1s. Drawings.]

A.D. 1863, January 9.—N° 76.

GOUPIL, EDMOND ALFRED.—(*Provisional protection only.*)—"An improved locomotive apparatus." A spherical ball of any dimension or material is enclosed in a cavity or socket, "the form of which will vary (for ornament or solidity) from a spherical to a spheroidal, or even a cylindrical shape, subject, however, to the invariable rule that the height of the socket shall be greater than the extent of the radius of the complete sphere, and that the orifice of the said socket be smaller than the diameter of the sphere, but sufficient to permit a segment of the inserted sphere (say about one-third) to project beyond the socket." In order that "the transmission of movement be rectilineal," the socket must "bear vertically upon the summit of the sphere." The socket is fitted to furniture in the same way as the ordinary castor. Or "the ball and socket may be let into the leg of a table, or bottom of any other piece of furniture, so as to be invisible while the furniture is in a vertical position, in which case the socket may be made with a collar, through which it will be secured to the furniture; or the ball may be let into the furniture and secured by a screw plate with orifice, or the socket may have a hollow above the first, so that the socket will more or less resemble a hollow cylinder divided by a partition, receiving on one side the foot, and the other serving as an arch to the sphere."

[Printed, 4d. No Drawings.]

A.D. 1863, January 17.—N° 152.

ASHE, ISAAC.—"Improvements in apparatus for preventing sea sickness;" namely, "suspended and balanced chairs, couches, and other supports." A standard with one or more curved branches is secured to any suitable part of the vessel. At the outer end of each branch is suspended a rope, chain, or other flexible material, to the bottom of which is attached "the rigid framework" of a chair. Instead of a rope "a ball and socket joint, or a ball and ring or washer joint, may connect the chair

to the branch. A balanced chair rests on either joint before named on the top of a pedestal or standard, "either with or without the intervention of springs." On the legs, or on a platform formed thereon, are placed "washers or rings of metal, of sufficient weight to keep the centre of gravity of the support for the person below the point at or on which it is balanced."

[Printed, 8d. Drawing.]

A.D. 1863, January 27.—N° 235.

ASH, CHARLES FREDERICK.—(*Provisional protection only.*)—"Improvements in the manufacture of cornices, joints, and laths of bedsteads, and other articles of furniture." The cornices are made of wood of various shapes or designs, and thin sheet iron or other metal is fastened over it. Or they may be made entirely of sheet zinc, or other metals stamped or drawn "through a suitable machine." The corner blocks are of wrought or cast hollow metal, with slots therein of the same shape as the ends of the rails; in each block is fixed an upright bolt. The rail ends are shaped to fit one over the other; a hole is drilled through each, so that when they enter the slots they drop vertically over the bolt. The lower portion of the pillar is provided with a threaded base, which being screwed on to the bolt secures the rails. Or the bolt may be fixed to the upper portion of the pillar and be screwed into a nut below. The laths "have an extra number of holes at either end," to admit studs fixed on a transverse bar; the bar carries threaded bolts which pass through either of the end rails, and the whole is tightened by screwing nuts on to the bolts.

[Printed, 4d. No Drawings.]

A.D. 1863, February 13.—N° 387.

GEDGE, WILLIAM EDWARD.—(*A communication from Hyacinthe Clare.*)—(*Provisional protection only.*)—"Improved table apparatus for promoting the comforts of persons at sea." The apparatus is an épergne or stand, "upon which will be placed glasses, bottles, plates, dishes, cruets, and in fact, if desired, the entire table service." On two upright supports fixed to the table, "and sufficiently above it to avoid touching it in the come-and-go motion, is a moveable axle;" from this is suspended a stand or tray for the bottles, &c., and "a weight in the shape of a move-

"able cylinder is carried at the lower end of vertical pieces, for the purpose of always preserving the equilibrium of the entire apparatus." The axle must be placed "parallel with the sides of the ship; nevertheless, when the inconveniences of pitching are to be avoided, the axle may be placed slightly slanting athwart ship." The axle of the weight is to be parallel to the axle carrying the stand, and "well placed in the centre of the lower extremities of the perpendicular pieces;" the weight must be "in proportion to that which the épergne or stand will have to carry."

[Printed, 4d. No Drawings.]

A.D. 1863, February 14.—N° 400.

PAUL, WILLIAM CARNE, and SHORE, ALFRED THOMAS.—
 "Improvements in the mode of constructing spring mattresses and other such articles for sitting and reclining upon." Two frames of the same shape and size are employed, and rows of spiral springs are fastened by staples to laths in the lower frame. The tops of the springs are attached by cords to the upper frame lengthways, breadthways, and diagonally. "Strong webbing is fixed on the corners of the top frame and drawn down in the middle and fastened to the centre of the bottom frame on each side and end." The upper frame and springs are covered with canvas, stuffing is applied on the top, and a tick covering is tacked to the outside edge of both frames. The springs may be of different sizes; "the largest at the head, the medium in the middle, and the smallest at the foot." To raise the head of the mattress and give it a greater inclination, "two leather straps with buckles are placed one at each side near the foot, so as to draw the two frames together."

[Printed, 6d. Drawing.]

A.D. 1863, February 24.—N° 500.

HAWTHORN, JOHN.—"Certain improvements in handles for doors, drawers, and other means of enclosure." The handles or knobs, to which this invention applies, are such as are made of china clay, earthenware, or other argillaceous substances," and the improvement consists in the method of securing the spindle to the knob. The spindle is a "double metallic screw;" the knob is *tapped* with a female screw; the upper portion of the spindle is

screwed into it and "secured therein by means of a cement, such as plaster of Paris." The projecting portion serves to fasten the knob to the door or drawer.

[Printed, 6d. Drawing.]

A.D. 1863, February 25.—N° 520.

FITTER, JOSEPH.—"An improvement or improvements in the construction of castors for tables, chairs, and other furniture, or other articles." The socket is made "with a rim or collar round the outside of the bottom," and inside the rim a circular groove is either cast in making or turned afterwards. The rim encloses the edge of a disc or plate which forms the upper portion of the horns. A centre pin or spindle, passing through the bottom of the socket and the disc, unites them; the pin is riveted or otherwise fixed within the socket (sometimes it is cast in while making the socket) and is secured beneath the disc by a screw nut or other contrivance. Between the groove and disc friction rollers are placed "loosely filling the circular groove or cavity in which they move without spindles or axles to impede or control their motion, and all the rollers being of the same size, each one will bear an equal portion of the weight resting upon the castor, and by placing the horns of the castors nearer the centre of the castors than they are usually placed, the bowls of the castors will quickly adapt themselves to move the table or other article to which they may be fixed." Sometimes small pieces of metal or wood are interposed between the rollers to prevent noise. To apply this castor to the legs of metallic bedsteads or other metallic furniture, a collar is welded to the bottom of each leg, and a circular groove (similar to the one mentioned before) is turned within it or formed in welding; the rollers, disc, and centre pin are applied as above described. If the leg is hollow, a socket is made to fit and screwed on. In a plate castor the under side of the plate is grooved.

[Printed, 8d. Drawing.]

A.D. 1863, March 3.—N° 600.

PARSONS, WILLIAM.—(*Provisional protection only*).—"Improvements in dining tables." The patentee expands his table frames by a system of cross levers, "such as are usually denomi-

"nated lazy tongs," the ends of the system being fixed to the ends of the frame. The expansion of the levers is effected by a screw and nut. "To tables with three or more sliding bars in the frame" he applies "cross bars between each pair of intermediate bars," and fixes "an intermediate pivot of the cross lever to each of such cross bars, under each of which a leg may be disposed."

[Printed, 4d. No Drawings.]

A.D. 1863, March 4.—N° 604.

PAUL, AMÉDÉE JEUNE.—(*Provisional protection refused.*)—Improvements in spring bed bottoms. The improvements "are based upon the application of cleats to the transversal bars, on the arrangement of the bands, which fix the spring in five places by means of a zinc washer, and in the jointed racks."

[Printed, 4d. No Drawings.]

A.D. 1863, March 5.—N° 619.

DWYER, ROBERT DOYNE. — (*Provisional protection only.*) — "Certain improvements in springs to be employed in the manufacture of beds, seats, or for similar purposes where an elastic surface is required." The spring is composed of two thin laths bound together at or about the middle of their length "by a band of tin or other confining material." The ends of the laths are "forced and retained apart by wedges inserted between them." These spring laths are to be employed instead of the ordinary rigid laths; "and by being attached to a hinged framing they may be raised at the head and lowered at the foot."

[Printed, 4d. No Drawings.]

A.D. 1863, March 6.—N° 636.

WILSON, ALFRED.—"The better and more commodious manufacture of all kinds of easy, lounging, and invalid chairs, seats, or settles." This invention consists "in the application of hammered or tempered steel, iron, vulcanized india-rubber, or any other kind of accumulative spring or springs;" they are fixed in or upon such parts "as may be best suited to the form and fashions" of the various articles. In one drawing, one end of a spring is screwed to a side of a chair frame, while the

free end presses against the moveable stump of an arm. In another, one end is screwed to a moveable back, the free end pressing against a hind leg; and in another, a spring has two branches screwed to a moveable back, while the free end is "kept in position" by a resisting rail under the seat."

[Printed, 1s. Drawings.]

A.D. 1863, March 17.—N° 713.

GEDGE, WILLIAM EDWARD.—(*A communication from Antoine Auvray.*)—"Improvements in the modes or means for framing pictures, looking glasses, and other objects." By this invention paintings or other objects are secured in their frames "with a flexible pressure, sufficient to preserve them from accident, by means of a curved plate or spring (with or without hooks, crotchets, or toothing) and a press screw," and the object framed is kept from contact with the frame by a band of any pliant or elastic material. There is not any novelty or peculiarity in the formation of the several parts; the order in which they are placed is, the frame, a band or fillet of flexible and elastic material, the object to be framed, at each corner a piece of elastic material, a bent metal plate with or without bracket ends, and a press screw; a second screw can be used if required. In the drawing are several modifications of the metal plate; it may be straight, or with an elbow in the middle, or with small brackets or flanges, or of hard or hardened wood, horn, caoutchouc, gutta percha, or other material, or with a spring toothed on one of its faces.

[Printed, 10d. Drawing.]

A.D. 1863, March 23.—N° 766.

EYLES, JULIA.—(*Provisional protection only.*)—"Improvements in cheffonier bedsteads," whereby they "contain and present for use all the fittings and utensils necessary for a bedroom." The greater part is occupied by a turn-up bedstead; the other part is provided with trays or shelves. The upper tray is furnished "suitably for washing;" a lower tray can be drawn out and placed above the upper one, forming a dressing table. A looking glass, may be permanently mounted on this shifting "shelf." Or a looking glass may be fixed on the under side of the top, which being hinged may stand upright or at any inclination. In the lower part "of the washing and utensil com-

"partment" may be placed "a foot bath and other bedroom utensils."

[Printed, 4d. No Drawings.]

A.D. 1863, April 7.—N° 875.

MACINTYRE, JAMES.—"Improvements in the manufacture of knobs and other articles in china and earthenware." The patentee employs turning in the manufacture of, 1, the above articles "of an oval or other form diverging more or less from a circular form;" 2, knobs, balls, handles, hat pins, and other similar articles "of a reeded, fluted, or other ornamental form." For the first the lathe required is constructed as follows:—A spindle is supported in bearings formed in a casting, and it receives motion from a crank shaft by a strap passing round an upper and a lower pulley; it is capable of being slid in the direction of its length when it is desired to change from circular to oval turnings, or vice versa; for this purpose there are suitably arranged clips, grooves, and a slotted lever handle, which lock the spindle in the required position. On the spindle is fixed a chuck "provided with V guides," between which a slider is moved to and fro by means of lugs thereon; the lugs embrace the outer surface of a ring "which is fixed in a position more or less excentric to the spindle," according to the shape of the oval to be given to the knob. A chuck of suitable form is screwed to the slider, and the knob, &c., is secured upon it, "a rough approximation to the form and size desired" having been first given to the knob, &c., "by throwing or other suitable means." For circular turning the spindle is slid forward until the lugs are clear of the ring, and the slider "is fixed in a central position" by a bolt passing into a hole formed in a projection thereon. In order that the article may be of uniform size and shape, it is preferred to use a tool, "the cutting edge of which is suitably formed to produce the shape desired;" it is secured in a holder supported in a rest, and a stop on the holder ensures the tool "always working up to the same point." This tool "only gives form to the head of the knob," whilst another, "conveniently held in the hand, gives form to the stem." To carry out the second part of the invention a lathe of different construction is required; the spindle is formed at its outer end in a pivot which is supported in the socket of a rod passing through the casting; the inner end is carried "in a bearing formed in one end of a lever which is

“capable of rocking upon a centre of motion.” To turn plain circular work a lever catch locks the upper end of the lever; but when an ornamental form is to be given to the article, the catch is raised, thereby setting the lever free “and permitting a vibratory motion being imparted to it, and consequently to the spindle,” by means of a rose plate or template; this is borne up to a fixed roller or pulley by a spring which acts upon the upper end of the lever; the force of the spring is adjusted by a screw. A cone pulley on the spindle is employed for giving motion when circular work is being produced; and an ordinary grooved pulley for ornamental work. In some cases the spindle is supported at each end by a lever, “these levers being cast in one and rocking upon the same centre of motion,” so that the spindle “may have a vibratory motion given to it in a parallel direction.”

[Printed, 2s. Drawings.]

A.D. 1863, April 27.—N^o 1050.

VALKENHUYZEN, MAURICE.—“A new caster for furniture.” This castor “consists essentially of two plates, which are indispensable to its rotation,” the one forming one piece with the horns and placed on the top thereof “in a nearly vertical position,” the other forming one piece with the centre pin or spindle and with the socket. The two plates are connected by the pin, which is riveted loosely beneath the lower one. In each plate is a circular groove, and between the grooves are “hard balls or beads” intended to render the rotary movement as easy as durable.” The upper portion of the pin enters the bottom of the foot of the piece of furniture, and the socket which surrounds the foot may be strengthened with a ring or rim at top. The socket may be increased in height, and the pin may be “shortened at pleasure” or entirely suppressed exteriorly.” If the castor is intended to be placed under a piece of furniture which has not legs, the socket is omitted, the upper plate is nailed or screwed to the article, and the pin “does not pass beyond the top of this plate.” The sockets can be made of any required shape; the several parts of any suitable material cast, moulded, cut, or stamped, and the inner surfaces of the plates, may be strengthened with a lining of sheet iron, steel, or other metal.

[Printed, 8d. Drawing.]

A.D. 1863, May 12.—N° 1195.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Julie Adolphe Massé.*)—"Improvements in spring mattresses," which are so constructed that they can readily be taken to pieces. If a wooden frame is employed, the sides are two boards carrying brackets to which the ends (also two boards) are secured by bolts and nuts. The sides are strengthened by cross bars to which spiral or other springs are hooked. On the end boards cross planks are fixed; on these are pegs to which laths or flat chains are hooked; the chains rest on the springs and on cross laths fitted over the springs. "The laths and springs are sustained "laterally" by leather loops hooked to pegs on the sides. If iron is used, two frames are required, the upper being "slightly "bent near one end to form a head or pillow," the lower being composed of bands of flat iron. The frames are connected at the corners by angle irons and are kept apart by stays. Cross bars of T-shape are riveted or screwed to the bands, and on the bars are metal plates for supporting the springs. There are laths or flat chains as before described; their ends are hooked "to holes "formed directly in the upper frame." Head and foot frames and legs may be hinged to either mattress.

[Printed, 8d. Drawing.]

A.D. 1863, May 12.—N° 1196.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Marc Louis Denis.*)—(*Provisional protection only.*)—"Improvements in spring mattresses, sofas, chairs, seats, and similar "articles." This invention "has mainly for its object the "fastening of the springs without the aid of strings, of sewing, "or of nails." Two frames are required; at each corner of the one carrying the springs a vertical tube is fixed, and a vertical rod at each corner of the other. The rods enter the tubes and are retained by nuts or by grooves formed therein. The springs are fastened "by means of claws formed on the laths." Or "two "boxes or cases without bottoms "may be used, one sliding within the other and retained therein by flanges. "One of the "boxes also carries flanges for supporting two frames of laths or "plates between which the springs are held." Grooves may be formed in one box and corresponding projections on the other.

[Printed, 4d. No Drawings.]

A.D. 1863, May 21.—N° 1277.

CLAPP, WILLIAM HENRY.—“An improved rail or holder for coats or other articles.” This holder is composed of two brackets, by preference of metal, and a rail (usually of wood) with metal fittings at the ends. The brackets “resemble ordinary hat pegs;” in their upper ends are notches of such shape that the rail cannot turn when placed therein. Each fitting consists “of two discs or flanges with between them a piece shaped to fit the notches in the ends of the brackets;” the inner disc is fixed; the outer one “is carried by a nut” that screws on to a projecting stem, “thus clipping the end of the bracket between them.” Or the two discs may both be made in one piece with the fitting portion. The notches in the brackets can be made near where they spring from the wall or partition; in this case the upper portions of the brackets can be employed as hat pegs.”

[Printed, 10d. Drawing.]

A.D. 1863, May 25.—N° 1316.

HARE, CHARLES.—(*Provisional protection only.*)—“Improve-ments in reclining and easy chairs.” The chair is made “in two parts at least,” the lower consisting of the legs and an under frame, the upper of the seat and back. The upper portions of the back of the under frame are curved or chamfered off. The upper part is made “right angled, or curved, or slanted at the lower portion of the back of the seat.” The two parts being fitted together are united near the back by means of a slotted plate or plates on one part and a stud or studs on the other, or by means of hinged plates. Near the front a rack or equivalent is fixed to one part, and to the other a lock catch with an ornamental knob.

[Printed, 4d. Woodcuts.]

A.D. 1863, May 29.—N° 1348.

IRONMONGER, ELI. — “An improved loose clip and socket joint, applicable to bedsteads, sofas, chairs, and other articles of furniture and of fencing.” In bedsteads a ring is closely fitted round a post; in the ring are cut two wedge-shaped recesses “in which are fitted the wedge-shaped ends of sockets;” one socket receives an end of a side rail, the other an end of a head

or foot rail; one side of this latter socket has cast on it another socket for the reception of one end of a rail; the other ends of all the rails being fixed in like manner, the laths are laid on and "kept in place by blocks placed between the two end laths" and secured to the inner rails; the laths are connected by webbing or similar fabric; by this arrangement the support of the laths is taken off from the outside rails. "The side, head, and foot boards of the bed or similar article may be held at both ends in grooves or recesses formed in clips or rings, screwed or otherwise secured to the head or foot posts." By varying the number of recesses in the rings the invention is applicable to chairs and similar articles and to fencing. Sometimes only a part of a ring, sometimes a square, or octagonal, or other shaped band is employed.

[Printed, 1s. 4d. Drawings.]

A.D. 1863, June 8.—N° 1415.

CLARK, WILLIAM. — (*A communication from Herman Hoback and Martin Henri Rumpf.*) — "Improvements in mounting and fitting bedsteads, chairs, and other movable seats on board ship." The articles are hung to a frame by a pivot on each side; the frame, furnished with a pivot at each end, oscillates on standards. For a chair one of the axes of the suspended frame is placed "in an inclined direction;" while for a bedstead both are horizontal. The article will "always retain a vertical position, and be independent of the motion of the ship."

[Printed, 6d. Drawing.]

A.D. 1863, June 12.—N° 1471.

MARCH, THOMAS CHARLES. — "Improvements applicable to the ornamentation or decoration of articles of furniture, part of which improvements may also be applied for architectural ornamentation." This invention relates "to a novel mode of employing glass in combination with metal, wood, or other suitable material for the manufacture of tables, flower stands, and other articles of furniture. The glass portions are made in separate pieces, which are connected by wire, pins, sockets, &c. to a metal or other framework: india-rubber or other washers are employed" so as to prevent any jar from injuring the more

“ brittle material.” Glass beading is used in place of ordinary moulding for door panels, wainscoting, looking-glasses, window frames, and other parts of houses. Details are given of the mode of manufacturing tables and of fixing beadings.

[Printed, 10*d*. Drawing.]

A.D. 1863, July 1.—N° 1634.

ALLISTON, THOMAS, and SWIFT, RICHARD. — (*Provisional protection only.*) — “ An improved mode of and apparatus for “ manufacturing metallic joints for bedsteads, and the appli- “ cation of such joints to certain parts of bedsteads.” A hollow box of any shape is cast on to the top of the leg ; in the box are vertical slots, “ set at right angles to each other,” into which “ the vertical sides of the end and side pieces (which are made of “ angle-iron) are dropped, their horizontal sides overlapping each “ other at the ends, and having holes in their extremities through “ which passes a screw pin standing up inside the box.” The lower part of the pillar, provided with a female screw, “ is screwed “ down over them, thus constituting a firm and secure joint.” A description is given of the mode of casting the box on to the leg, the screw pin inside the box, and the female screw on to the lower part of the pillar.

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 7.—N° 1687.

GEDGE, WILLIAM EDWARD. — (*A communication from François Carré.*) — “ Improvements in the construction of seats, chairs, “ sofas, lounges, and other similar articles of furniture.” The seat of the chair, &c. is composed “ of a number of radiating “ metal laths or plates,” bolted at their inner ends “ to a metal “ cover occupying the centre of the seat.” The outer end of each lath is curved to “ about a quarter circle,” and is bolted “ inside the ring or frame of the seat.” The bolt passes through the frame, the radiating lath, a steel plate (“ following the shape “ of the lath ” but extending only a “ little beyond the curve”), and through a flat piece of iron which keeps “ the entire breadth “ of the short steel plate pressed against the radiating plate;” the bolt is secured by a nut. The chair back is formed of vertical metal laths bent at the ends, whereby they are riveted to cross pieces.

[Printed, 8*d*. Drawing.]

A.D. 1863, July 9.—N^o 1716.

TENT, WILLIAM.—(*Provisional protection only.*)—"Improve-
ments in pins or hooks for suspending fabrics, dresses, or parts
of dresses, curtains, and other articles of upholstery or apparel."
The Specification merely states that this invention "relates to a
novel form of combined hook and pin, which is constructed in
such a manner that it can be easily and yet securely attached
to any fabric without any sewing, and as easily detached there-
from when required. To this end the hook, upon which any
article or fabric is to be hung, is adapted to or made to form
part of a safety pin made of strong wire."

[Printed, 4d. No Drawings.]

A.D. 1863, July 16.—N^o 1788.

MONTLEART, AGATHA, and TENT, WILLIAM.—"An im-
proved mode of attaching hooks to furniture or fabrics for
suspending dresses or parts of dresses, fabrics, curtains, and
other articles of upholstery or apparel." This Specification
contains a description of the combined hook and pin, for the
invention of which provisional protection was granted to Mr. Tent
July 9th, 1863, N^o 1716. The article is made of one piece of
brass or iron wire; this "is first bent to form the hook;" it is
then "curled over vertically and back to a horizontal direction to
form a rest or catch;" it is next "carried down to a suitable
distance, thereby forming a stem," and "curled round" at
bottom to ensure elasticity to the pin, "which is produced by
continuing the wire upwards to the rest or catch." A fastening
of greater strength is made in two parts, "in order that the hook
which will bear the greater portion of the strain may be made
of stouter wire than the spring pin." The hook stem is made
with "a spread or flat" part, which is "hollowed out by turning
up the edges" to receive the pin stem. Or the hook may be
soldered to the pin stem; "a kind of brooch fastening" receives
the pin point. The pin may be "inserted transversely in the
fabric" by fastening the hook on at right angles to the stem.
A ring or eye may be attached to the stem, "so that a hook may
be suspended therefrom." Another fastening is made from
two hooks, one "being curved upwards, and the other down-
wards;" both hooks are "vertical, but at right angles to each
other in plan."

[Printed, 6d. Drawing.]

A.D. 1863, July 17.—N° 1793.

SEDLEY, ANGELO JAMES.—(*Provisional protection only.*)—“Improvements in the canopies of bedsteads of metal or wood, or “both combined, and other articles of furniture used to sit or “recline upon.” A pin is fastened “by preference to the out- “side face of each of the head pillars of the bedstead,” and in French bedsteads to the side pillars; to the pins are attached “moveable bracket levers or arms projecting forwards and up- “wards.” To the upper ends of the arms is fixed “a cross or “rectangular framing.” On or near the top of the pillars is a blind roller with a pulley at one or both ends. The head cloth for the canopy is secured at one end to the framing and at the other to the roller. By pulling a cord attached to the framing and wound one or more times round the pulley, the head cloth will be wound round the roller and the canopy will be drawn back. The curtain rings are “run on this cord in the space inter- “mediate” between the framing and the head pillars. A roller blind may be added to the under part of the frame at the front of the canopy.

[Printed, 4d. No Drawings.]

A.D. 1863, July 20.—N° 1816.

AYCKBOURN, FREDERICK.—“Improvements in air and water “beds, pillows, bolsters, and cushions.” The patentee claims the invention of “a novel form or construction of connection or “junction piece for connecting the several tubes together.” A metal tube with a projecting flange in the middle is threaded at both ends and enters the female screws of the nozzles secured to the tubes to be inflated, until the flanges of the nozzles are brought up to the projecting flange. A bed for one person consists usually of three “flexible air or water-tight tubes,” the middle one having a short branch tube which is closed “by a “removeable cap piece provided with a thumb nut or screw.” Each tube “may be isolated” by screwing into its nozzle a cap piece. Larger beds are made on the same principle. In pillows, &c. the air tubes are arranged by preference from front to back, and they are made of “wedge form.”

[Printed, 8d. Drawing.]

A.D. 1853, October 2.—N° 2414.

CHARLTON, ROBERT.—(*Provisional protection refused.*)—“Cer- “tain improvements in metallic bedsteads.” The patentee proposes

to apply "arched, semicircular, or curved metallic framing at the " head and foot of metallic bedsteads " instead of the square framed ends hitherto used.

[Printed, 4d. No Drawings.]

A.D. 1863, October 8.—N° 2470.

MEAD, JOHN.—(*Provisional protection only.*)—"Improvements " in the construction of various articles of furniture," especially adapted for use "as cabin or camp furniture." An article can be used as a whatnot, stand, or table by connecting the surfaces or shelves by uprights which are hinged thereto and which can also be folded inwards "at or about the centre thereof." When the uprights are in use, they are kept vertical by bolts, stays, &c. or "by the insertion of a cross piece." Flaps can be hinged to the upper surface. Seats may be constructed on the same principle. Several of such folding parts "may be combined together and "hinged or jointed to a series of intermediate surfaces."

[Printed, 4d. No Drawings.]

A.D. 1863, October 26.—N° 2643.

GEDGE, WILLIAM EDWARD.—(*A communication from Ernest Lorient.*)—"An improved pillow." The frame is of "cane or "other analogous material, at different points of the circuit of "which are attached bands or straps fastened elsewhere to spiral "springs, usually five in number, one in the centre and one "towards each of the four corners." The bands are sewn together wherever they cross; and two bands "crossing on the "same plane as that of the cane edge or frame unite the centres "of its opposite sides." The whole is enclosed in a strong fabric; a layer of horsehair or other substance is added, and a covering of tick completes the pillow, two openings being left at the extremities "to permit a free circulation of air."

[Printed, 8d. Drawings.]

A.D. 1863, October 30.—N° 2681.

NASH, JOHN.—"An improved mattress for beds." An ordinary "bottom spring frame" is employed, having "a thicker canvass than usual at top." The edges only of this surface are stuffed "with the usual edge roll." A wool, hair, or other mattress is tufted to the top of the spring frame, the cords of the tufts passing through the canvas. "To allow the bed clothes to

"be tucked" between the edges of the mattress and the spring frame, a space all round of about a foot in width is left unfastened. Or a wooden block is fixed on each corner of the frame, and within the edges of the sides of the mattress a wooden lath is placed whose ends are fastened to the blocks.

[Printed, 4d. No Drawings.]

A.D. 1863, October 31.—N° 2702.

LAW, WILLIAM.—"Improvements in the construction of articles of furniture known as wardrobes, including improved arrangements for attaching doors to the same, such improvements in attaching doors being applicable to other articles of furniture." The doors are at the sides, and a partition divides the interior of the wardrobe into two compartments. The doors are not hinged at the back edge, but turn on pivots "at or near the top and bottom of the centre line" thereof, so that they can be turned round and have a shelf or shelves attached to them. The doors of washstands and sideboards can be arranged in like manner.

[Printed, 6d. Drawing.]

A.D. 1863, November 3.—N° 2719.

BOOTH, JOHN PETER.—(*Provisional protection only.*)—"Improvements in beds and bedding." A wooden frame is employed "provided with open woven canework" to support the bedding, which is composed of a mattress and feather bed "combined in one outer case." The case is divided into two compartments, one being filled with the usual stuffing or a cheap kind of feathers, the other "with the ordinary feather stuffing." If preferred, the stuffing for the mattress may be in a separate case and attached to the other by straps, bands, &c. Sometimes legs are screwed into the frame "so as to form a bedstead in case of need."

[Printed, 4d. No Drawings.]

A.D. 1863, November 13.—N° 2836.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Silas Safford Putnam and Harriet Luthera Packer.*)—"Improvements in apparatus used when rolling blinds, maps, and other articles on rollers." This invention consists, 1, in placing the friction, which is necessary for holding the weight of the blind,

"within the roll itself or its cap;" 2, in a mode of securing the blind to its roller without the use of nails, so that the blind can be readily put up or taken down or adjusted when up without the necessity of taking down the roller. 1. To one end of the roller is glued or otherwise fastened a spool, over which the blind cord is wound, and which has its end next the roller "turned out" so as to form a bearing or shoulder. In the same end of the roller is formed a recess (in its axis), in the bottom of which is placed a spiral spring; this bears against one end of a pin or shaft. This pin projects through the spool (which is free to turn on it) and has a collar which bears against the shoulder of the spool; its projecting end is square and fits in a corresponding slot in its bracket, thereby preventing it from revolving with the spool and roller. 2. A dovetail slot or groove is made longitudinally in the roller; the upper edge of the blind is lapped round a small rod, which with the blind attached to it "is entered sidewise into the groove." When the blind is drawn downward the rod will be jammed between the inclined sides of the groove and against the blind.

[Printed, 8d. Drawing.]

A.D. 1863, November 17.—N° 2877.

BURTON, FREDERICK WILLIAM.—(*Provisional protection only.*)—"Improvements in the construction of music stools, tables, and other articles of furniture, and in means of securing such articles to floors." The seat of the music stool has applied to it "a stem with pin holes or recesses therein to receive a spring or other pin in the body or under part of the stool, by which the seat may be retained at any height;" and to the stem is applied "a spring with a tendency to keep the seat raised to its highest position," except when pressed upon by the pin. A lighter spring counteracts "the tendency to rebound." This arrangement is applicable to all such articles as require "difference of elevation." For use on shipboard chairs have a peg or stud "at or near the centre thereof," which descends "with a head to pass into and be held by the sides of a groove in a plate let into the floor." Tables have two or more such headed studs, and enlarged openings are formed in the grooves to admit the withdrawal of the heads. The studs may be made with a slight spring.

[Printed, 4d. No Drawings.]

A.D. 1863, November 28.—N° 2992.

IRONMONGER, ELI.—(*Provisional protection only.*)—"Im-
 "provements in the means of fitting together or connecting
 "articles or parts of articles," especially bed posts and rails.
 Round or partly round a post is fitted a ring or band formed with
 one or more recesses or sockets for the reception of the end of a
 rail or rails, or of a socket or sockets, into which the end or ends
 fit, or of a block or blocks whereto the end or ends are fixed, "the
 "said end part, block, or piece being of wedge, dovetail, or other
 "shape to correspond with the shape of the recess, mortice, or
 "socket in the ring, and fit closely in or upon the same." The
 socket in the ring "may have one or more sockets cast or formed
 "thereon; the extra sockets are "to receive a rail on which and
 "on similar rails similarly held the laths are laid, being kept in
 "place by blocks or otherwise, so that they are thus supported
 "on these rails instead of on the side rails as usual." The side,
 head, and footboards may be held at each end "in grooves or
 "recesses formed in clips or rings fitted to the head or foot
 "posts." Partitions may be connected "by fitting round a post
 "a ring having recesses holding forked wedges in which are fitted
 "boards or partitions; and fencing may be constructed by fitting
 "into a recessed ring wedges, to which chains, wires, or bars are
 "attached." Sometimes the socket is formed in a piece which is
 screwed or let into a post, wall, or other object; sometimes there
 are projections, pins, or studs on the rings, instead of or in addi-
 tion to the sockets, for connecting "bars, boards, or other articles"
 thereto.

[Printed, 4d. No Drawings.]

A.D. 1863, December 8.—N° 3097.

TOD, JAMES.—(*Provisional protection only.*)—"An improved
 "preparation for the treatment of flock and other furniture
 "padding to render the same obnoxious to vermin." The
 patentee has composed a "liquid preparation" which "will pre-
 "vent the destructive effect of the moth upon woollen and cotton
 "flock," and "the harbouring of vermin" in other kinds of
 stuffing. The preparation consists of "methylated spirits of nitre,
 "camphor, and patchouli, combined together in or about the
 "proportions of two pints of methylated spirits of nitre and one
 "ounce of patchouli to one pound of camphor." In applying

the invention "to woollen and cotton flock of the common quality, " which is produced from rags," an ordinary rag beater is employed, and a vessel containing the preparation is placed above the feed apron. By letting the liquid drip on to the rags "as they " pass to the breaker cylinder " a thorough distribution is ensured among the fibres when separated by the tearing action. Other means of distribution may be adopted.

[Printed, 4d. No Drawings.]

A.D. 1863, December 8.—N° 3099.

NEWTON, ALFRED VINCENT.—(*A communication from Anton Courlander Crondal.*)—(*Provisional protection only.*)—"Improve-
" ments in the mode of and apparatus for preparing cork stuffing
" for mattresses, pillows, cushions, and other articles, and in the
" mode of applying the cork stuffing thereto." Cork waste is
ground up into pieces "about the size of a pea;" it is put into a
tank which has "a moveable or piston head." Oil is poured in
and forced into the pores. When the cork is thoroughly impreg-
nated, it is taken out and placed in a cylinder "provided with
" beaters, which, by rotating, agitate the cork and speedily cause
" it to dry;" it is now ready for use. The tick of the mattress is
to be divided "into rectangles and squares" to form separate cells
for an "equable distribution."

[Printed, 4d. No Drawings.]

A.D. 1863, December 11.—N° 3119.

TUCHET, SUSAN, the Honourable.—(*Provisional protection only.*)
—"An improved roller for window blinds." The roller externally
has the appearance of the ordinary blind roller; it is divided
longitudinally into two parts which are joined by hinges. "On
" one part and lengthways needles (or nails) are inserted at
" intervals whereon to affix the blind. The other part of the roller
" closes over the needles or pins and blind like the lid of a box.
" The two parts of the roller are secured together in addition to
" the hinges by rings or other catches."

[Printed, 4d. No Drawings.]

A.D. 1863, December 21.—N° 3229.

FITZGIBBON, VICTOR BEARE.—"Improvements in spring
" mattresses or beds, and cushions," whereby they are rendered

reversible and flexible. Instead of employing a wooden frame, "double rows of watch-spring steel, or other similar material," connect the outside springs. The spiral springs are tied at top and bottom to longitudinal, transverse, and diagonal pieces of watch-spring or similar steel, whose ends are fastened to the double rows. The spring frame thus formed is sewn into a canvas case; stuffing is added on both sides and round the borders, and the whole is enclosed in a suitable cover.

[Printed, 8d. Drawing.]

1864.

A.D. 1864, January 9.—N^o 62.

CULVER, JOHN PETER, and JARVIS, ROBERT BRUCE.—(*Provisional protection only.*) — "Improvements in roller blinds," whereby "they may be actuated and controlled in a more simple and easy method." The right end of the roller carries "a flanged pulley or reel, beyond which a ratchet wheel is fixed." Over the ratchet is adjusted "a lever pall" working loosely on a stud or "projection," and with its catch "extending backwards and downwards into the teeth of the ratchet." The front end of the pawl "is supplied with a small grooved roller over which the cord passes, and from thence extends over the flanged pulley or reel to which it is attached." The action is as follows:— "Assuming the blind to be rolled up and it is desired to lower the same, the cord is to be so slightly pulled or drawn as only to disengage the pall from the ratchet wheel by the descent of the lever or front end of the pall;" the weight of the blind will be sufficient to unroll itself, and the cord, "being allowed to slip through the fingers of the operator," will wind round the pulley. "To stop or retard the motion of the blind it is merely necessary to release the cord, when the weight of the pall (being heavier than the lever end thereof) will cause it to fall and catch into one of the teeth of the ratchet."

[Printed, 4d. No Drawings.]

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A.D. 1864, January 22.—N° 172.

BURTON, FREDERICK WILLIAM.—(*Provisional protection only.*)
—“Improvements in securing chairs, stools, tables, and other
“articles of furniture to floors,” more particularly on board ship.
The article “is secured to the floor in such manner as to admit of
“slight movement in various directions without permitting it to
“be tilted over.” A chair or stool has “at or near the centre
“thereof a peg or stud descending downwards, with a head to
“pass into and be held by the sides of a groove in a plate affixed
“to the floor.” Tables may have two or more of such headed
studs, and the grooves may be made “with enlarged openings to
“admit of the withdrawal of the head of the stud.” The studs
“may be formed to slide in a tube or socket or on a jointed arm,
“or with a slight spring to admit of a slight play, or to admit of
“their descending if desired below the level of the feet of the
“article to which they are applied into a groove flush with the
“level of the floor.” The studs may be so shaped that they
“can only be introduced or withdrawn in one particular position ;”
they may be formed “on a plate or tube capable of
“sliding on a bar or frame carried by the chair or other article
“whilst it simply turns in a stationary plate fixed to the floor ;”
or they “may be affixed by a plate to the floor, or be capable of
“sliding up and down in such plate, and be capable of sliding in
“or upon parts carried by the article.” Another method is “by
“means of a jointed link or links or a chain one end of which is
“connected to such article so as to turn upon a pin joint or
“swivel some distance from the floor, say, in the case of a chair,
“about fifteen inches from the floor, whilst the other end is
“connected by a pin joint or swivel to the floor.” In a chair “a
“lifting play of one and a half inches will admit of sufficient side
“or endway shifting,” but the amount of play may be varied.
“To give a slight extra play in a direction from front to back”
the end of the link or chain may be attached to the chair, “so as
“to be capable of a sliding motion,” and a like motion may be
given to the end attached to the floor ; the amount of play may
be obtained by the use of springs “in the connecting means.”
The connections to the floor may be “by eyes, or hooks, or bolts
“attached to plates having under plates or horns,” which are

passed through holes in the floor and secured by screws or other means.

[Printed, 4d. No Drawings.]

A.D. 1864, January 22.—N° 174. (* *)

SEWELL, JOSEPH.—“Improvements in apparatus for raising or lowering Venetian or other blinds, curtains, or shutters.”

This invention is applicable in the raising of articles where the operation is performed in such manner “that the weight upon the cord which raises them gradually increases or accumulates as they are drawn up higher,” and the object of the invention is “to counterbalance this weight by giving to such cord an increased power or leverage as the weight therein accumulates, and thus equalize the strain throughout.”

In carrying the invention into effect a spindle or shaft is mounted so as to be capable of revolving in its bearings and also moving longitudinally therein, and upon this shaft are fixed conical pulleys or barrels, the small ends of these pulleys all pointing in one direction. The cords for raising the articles to be lifted are connected to the longer ends of these pulleys or barrels, and on the shaft being turned the cords are coiled upon such barrels, commencing at the larger and proceeding gradually to the smaller ends, the perpendicular tension of the cords causing the shaft to slide endwise during this operation in the direction in which the larger ends of the barrels point. For giving motion to the shaft another conical pulley or barrel is used, a cord being attached to the smaller end thereof and coiled thereon towards the larger end. The result of these arrangements is that as the cord is drawn from the latter barrel the power of that cord increases as it acts more and more upon the larger part of the barrel, while the other cords coil from the larger towards the smaller parts, the desired equalisation of strain being thus accomplished.

[Printed, 10d. Drawing.]

A.D. 1864, January 23.—N° 183.

EDWARDS, JOHN.—(*Provisional protection only.*)—“Improvements in the manufacture of curtain hooks.” The hook is shaped “something like the letter S; one end is made to touch

"or almost to touch the bow of the hook;" this end is passed through the curtain.

[Printed, 4d. No Drawings.]

A.D. 1864, January 25.—N° 212.

VAILE, SAMUEL. — "Improvements in tables," so that they contain "a billiard, bagatelle, or other game table, or two or more game tables." If there is only one game table, it is fitted so as to slide inside the table frame; if there are two it is constructed so that it may be lifted out and turned over, "the second game being played on the under side;" or a similar table is placed on the top of the lower one. All removeable game tables are fitted with moveable adjusting legs, so that they can be used independently; these tables when not in use are hidden by a leaf or leaves; there is at each end of the table frame a box for the balls, &c. Three methods are described for raising or lowering the game table:—1. Four pulleys, forming a rectangle, revolve on bearers; in each pulley is fixed an elevating screw with a square head which fits into a recess in a metal cross bar; each pulley is provided with a projection to which a handle can be applied; between the bearers is a cross bar carrying a tightening contrivance; this consists of a smaller pulley whose axle slides in a guide, being worked by a screw and key. A band passes round the four pulleys and over the smaller one. When the band has been tightened by screwing up the smaller pulley the handle, applied to one of the projections, is turned, and the game table rises. The adjusting is effected by slackening the band, so that each pulley may be moved independently. Tongues at the ends of the metal cross bars slide in grooves or guides in the table frame. 2. In the table frame are metal guides for guiding the ascent. In the metal bearers are grooves in which bars slide connected to cross heads; these are joined by other bars to screw nuts, in which a shaft works, threaded at each end and running the entire length of the table. 3. Toothed wheels carrying elevating screws gear into double-toothed wheels which gear into worms on a driving shaft; all the elevating screws are by preference telescopic. Some tables are constructed "with a permanent bottom," which is adapted as a game table. The tables "may be made to expand by additional leaves in the ordinary manner."

[Printed, 1s. 4d. Drawings.]

A.D. 1864, February 2.—N^o 274.

ANDERSON, DAVID.—“Improvements in the manufacture of
“curtain and other rings, and in tools to be used in the said
“manufacture, which improvements are also applicable to the
“manufacture of other articles of an annular figure.” The rings
are made from two half rings or shells; two plates of metal are
raised by the action of stamping or pressing tools into blanks
having each nearly the figure of one half of a ring; the waste
metal is cut away, and “the two shells are connected together by
“the closing of the flanges of one shell upon the flanges of the
“other shell.” In making rings for cornice poles “or other
“rings in which small or supplementary rings or loops are
“required on the inner or outer edges of the ring the small rings
“are formed” of the same pieces “of metal as the two half rings
“or shells, the dies, cutting, and other tools employed having the
“required figures;” they are by preference closed by a separate
pair of closing tools; they may, however, be made separately and
soldered or otherwise fixed to the principal rings; and it is
preferred to strengthen them by the insertion of wire rings. The
tools employed are “pairs of dies or cutting tools;” the improved
pair “resemble the tools commonly employed for closing metallic
“shells upon one another, excepting that instead of having one
“set of closing edges they are provided with two sets of closing
“edges, which act simultaneously on the outer and inner flanges
“of the half rings or shells respectively.” By one operation “the
“upper edges of the flanges” of one half ring “are cupped or
“turned inwards,” so that they can be placed within those of the
other; and the improved die being brought down upon the two
half rings, “the edges of the flanges of the lower half ring are
“closed upon those of the upper.” The edges of the supple-
mentary rings are closed in like manner, “the central peg” of
the die occupying the interior of the ring.

[Printed, 1s. Drawings.]

A.D. 1864, February 3.—N^o 289.

WALKER, ALEXANDER JAMES.—“An improved clothes hang-
“ing apparatus,” consisting of “a pendent hook,” which is
suspended from a nail or screw and capable of being readily
removed; it is made of metal, with one or more projections, and
with an eye “at the upper end of the back” for the admission of

the nail or screw ; " this eye is preferable when made with a notch " in the upper portion," which will " take behind the head " of the nail or screw and prevent the hook from slipping off. Several of such hooks may be united by rivets or screws to a bar or series of links, and the whole may be suspended by eyes in the end hooks, and if necessary in one or more of the intermediate ones. If the bar is jointed, it can be folded for transportation, and the hooks be brought side by side ; if not jointed, " the hooks can be " turned into the same plane as the bar ;" or the hooks with their arms " are made with a round body," which " passes through the " sustaining bar ;" the bar " may be of two pieces screwed together after the hooks have been inserted in their places ;" or the lower part or arm of the hook may be secured to the other portion by a screw and nut. " Bands or short tubes of india-rubber or similar material are employed around the hook at the " part that comes in contact with the wall or the place where the " hooks are suspended to prevent injury and render the hooks " more steady."

[Printed, 8*z*. Drawing.]

A.D. 1864, February 12.—N^o 375.

BURTON, FREDERICK WILLIAM.—" An improved article of " furniture, parts of which are also applicable to other articles of " furniture." The article is generally " of a quadrangular or " oblong form," mounted on castors ; the front opens outwards on hinges at or near the bottom ; it may, however, be made to slide. When the front is opened, a recessed part of the article is disclosed fitted as a portfolio. A flap is joined to the upper part of the front, " by preference by spring stop hinges," so that it is " capable of inclining forwards at the top," and form a shelf ; it has inside recesses to hold the ends of an easel, which is " drawn " from the body " of the article. The make of the easel is described in the Specification. Above the easel and portfolio is a hinged or sliding cover, on the inside of which are notches for receiving the leg of the easel. In the upper portion of the article are drawers for colours, &c. On the opposite side are two drawers, on whose fronts flaps are jointed and furnished with racks and supports ; below are cupboards. The front and flap are provided with bolts, segments, and stops, where such are required. The part " forming the portfolio, and when desired, the easel also ;

“ with its enclosure, may be formed as a separate piece of furniture, or may be formed separate, so as to be attached to another piece of furniture,” or as a part of another piece.

[Printed, 1s. 4d. Drawings.]

A.D. 1864, February 16.—N° 401.

DEAVIN, JOHN, DEAVIN, MARTIN, and SUTTON, JOHN HENRY.—“ An improved method of obtaining oscillating or swinging motion in swings, cradles, cots, and other like articles,” by means of either cords or clockwork. The swing is carried by two uprights, which are suspended from an axis supported by the swing frame, and two cross beams are connected one to each upright near the upper end thereof. Above the axis of the uprights four pulleys are mounted on an axis also supported by the frame; two cords, connected at one end to the uprights, carried through rings or pulleys in the fore end of the cross beams, and thence over two of the pulleys, “ are brought down within reach of the occupants of one end of the swing, and are attached to a handle;” other two cords similarly arranged (but carried over the rear ends and the other pulleys) descend to the other end of the swing. The oscillating motion is obtained “ by pulling alternately on the handles.” If clockwork is to be employed, a slot is formed in the top of either or both uprights to receive a crank or bent rod; one end of this projects beyond the frame and carries a pulley, over which a chain passes with a weight attached to it; the chain is connected to clockwork, and when this is wound up the descent of the weight will cause oscillating motion to be imparted to the swing. Or a spring may be used instead of a chain and weight. Sometimes both cords and clockwork are fitted to the swing; in this case, the crank “ must be removed when it is desired to obtain the oscillating motion by the cords.”

[Printed, 1s. 4d. Drawings.]

A.D. 1864, February 24.—N° 466.

WHITTENBURY, JAMES CALEB, and WHITTENBURY JAMES CALEB, junior.—(*Provisional protection only.*)—“ An improved convertible desk, church seat, and table, applicable for school and church purposes.” Two uprights, one shorter than the other, rise from each of two feet; the shorter support a fixed

seat, the longer a broad board. This board is hinged "on the under side at a point in its breadth" to the uprights, and by means of two quadrants is capable of being kept in a horizontal, sloping, or vertical position. On the under side is hinged a hook rest, "for the seat immediately behind." Ink vessels, having spring covers and mounted on pivots, are sunk into the board.

[Printed, 4d. No Drawings.]

A.D. 1864, February 29.—N° 500.

GEDGE, WILLIAM EDWARD.—(*A communication from Paul Geofroy-Gomez.*)—(*Provisional protection only.*)—"A hygienic and inodorous apparatus, applicable to the cradles or cots of children, and to the beds of adult invalids." At one side of the cot or bed is a drawer. The bedding is composed of a spring mattress, a woollen one, and a linen sheet, all provided with an opening over the drawer. Around the opening is placed "a cushion of round and convex form, made of caoutchouc or gutta percha, and having a tube of the same material" for inflating it. A funnel shaped basin, with a valve at its lower end, descends into the drawer. In a cot a caoutchouc or gutta percha band is glued on at about two inches from the circumference of the cushion; this band is buttoned round the child's "thighs and buttocks."

[Printed, 4d. No Drawings.]

A.D. 1864, March 4.—N° 544.

SLATER, DANIEL.—"Certain improvements in cabinet furniture, and fixtures attached thereto." One improvement consists in fitting cabinets with sliding doors, which meet in the middle and are locked by one bolt; they are formed of slats, "fastened at the back by hinges, strips of wire gauze, or cemented on cloth in any way so as to attach them in one continuous sheet;" they pass back into grooves parallel to the sides. The slats are sometimes strengthened by back slats, the metallic strips or cloth being put between them. A second, "in constructing doors of cabinets with fretwork, backed up with glass panels of any colour." A third, in "new forms of flush handles for drawers for such cabinets:"—The drawer front "is turned out in a concave form;" the stem of a knob passes through a hole therein and is glued or screwed to a collar. Or the hole may be

slightly elongated, and the stem may have attached to it a wooden or metal bolt, which projects through the bottom and enters a slot below, thereby fastening the drawer. Another flush handle consists of a metallic concave disc, "across which is a partition "handle," perforated and ornamented. A fourth relates to substituting enamelled metal, porcelain, glass, or enamelled wooden rails for those generally used in making towel or linen horses.

[Printed, 8d. Drawing.]

A.D. 1864, March 8.—N^o 576.

COWLES, EDWARD.—"An improved sofa or transformable "bed." When the article is in use as a couch or sofa, the seat is formed of two framed spring cushions, one above the other. The upper is capable of sliding forwards in grooves cut in the ends of the sofa frame; on its under side two folding legs are hinged. The frame of the under cushion rests on ledges; it has at each end a piece of wood hinged to its under side; two cords are fastened to each piece in such a manner that by pulling one pair the under cushion rises and the pieces fall on to the ledges, thereby supporting the cushion, and by pulling the other pair, the pieces rise and the cushion frame sinks down on to the ledges. This invention is applicable to "chairs, desks, or tables." To obtain sufficient length the chair back is hinged to the chair frame and "carries a segmental notched rack."

[Printed, 10d. Drawing.]

A.D. 1864, March 14.—N^o 649.

BROADBRIDGE, CHARLES RICHARD.—"Improvements in "adapting occasional dining and other tables to the purposes of "playing games," that is to say, the game of billiards. The surface of the table is made of slate, but it may be of wood or other material, and covered with green cloth; the edges are rounded, and the corners "are adapted to the form of the pockets." The cloth is strained "round the outer edges and underneath the "top, fixing it to the framing or to a fillet let into the under side "of the slate." Sometimes the top is made with a fillet of wood around it, "secured by dowels and screws or otherwise to the "edges of the slate;" in this case the cloth is stretched on the slate only and folded down between the fillet and the slate, or it

may be further secured underneath. The framework is made lighter than usual, and the table is supported on four legs; these are constructed each in three pieces, the top and bottom having sockets with female screws, and the middle piece being furnished with right and left male screws fitting thereinto. A drawer is "fitted below the bed of the table" for the purpose of containing the balls, cues, &c. The cushions are in six separate pieces, and consist each of a wood backing with an india-rubber cushion; each is mounted on two hinges, and to secure it when down a spring catch, fixed to the under side of the table, takes into a notch in the backing; the notch is faced with metal to prevent wear. "To hold the cushions in the upward position" metal bands, "furnished with suitable pins," drop into metal sockets in the backing; each metal band "has formed with it a light wire or other frame taking the form and fitted to the mouth of the pocket" to which the netting of the pocket is attached. If one part of the hinge is "bent at right angles," and the joint "thrown inwards under the table top," the cushion, when out of use, will be suspended "within the limits of the table top," and the catch will not be required. The slate top can be laid on a wooden top or on a broad wooden bordering; "this will give increased facilities for fastening the cloth and the hinges."

[Printed, 10d. Drawing.]

A.D. 1864, March 19.—N^o 703.

RIBOULET, PIERRE JOSEPH, and LAPELOUZE, CÉSAR.—(*Provisional protection only.*)—"Improvements in apparatus for maintaining in a horizontal plane tables, beds, sofas, pianos, billiard tables, and other articles on ship-board." The improvements consist in the employment of "a ball or pivot and socket," the former being "supported by an upright from the deck, or by a curved rod fixed to a partition or any suitable upright," the latter being "fixed directly to the article to be maintained in a horizontal position." In tables, the socket is secured to a framework underneath the table top; the legs rest on a ledge or rail forming part of the frame which also carries seats. "Feet turning upon centres of motion beneath the framework" are arranged in such manner "that they may be let down" and support it. Beds are placed by preference in pairs, one above the other; the ball and socket are on the under side

of the upper one. An inclination from head to foot may be given to the beds by applying a counterbalance to the upper, and a rack to the lower one.

[Printed, 4d. No Drawings.]

A.D. 1864, March 21.—N^o 711.

REILLY, JAMES.—“Improvements in the manufacture of “mahogany and other wood chairs, tables, couches, sofas, and “other similar articles of furniture,” namely, “in improved modes “of jointing or framing together the different parts,” especially the back and side rails and the chair or sofa back. Nuts are inserted into the tenons of the back rail; the tenons are framed into the back legs; through “the face sides” of the legs holes are bored and corresponding holes through the back ends “of the “shaped side rails;” and screws are passed through these holes into the nuts. To give additional strength the back ends of the side rails are lengthened and fastened to the back rail by coach screws. There are drawings of variously shaped chair frames (some made with a brace between the ends of the side rails) shewing the position of the screws and nuts. “In all cases the side rails and “other parts against which the heads of the screws come in “contact are countersunk.” The back and arms are bolted on by means of these “improved nuts and screws.” The back of a sofa is secured to the frame in a similar manner. “When the “articles of furniture,” says the patentee, “are not required to “be taken to pieces, I use glue where expedient, in addition to “the screws and nuts or coach screws.”

[Printed, 1s. 6d. Drawings.]

A.D. 1864, March 22.—N^o 727.

EDIS, JOHN.—“An improved method of fastening table tops “without the aid of thumbscrews.” Two metal plates “forming “a lock” are employed: one is fixed upon the block of the table, the other “upon the clamp of the table top.” Two pairs of these plates are used to each table, “and they are respectively fixed at two angles of the rounded back edge of the block.” The plate on the block has in it two apertures to receive two studs carried by the other; sometimes there is only one aperture (suitably shaped with a recess) which admits both studs. The shape of the plates may be varied, and the one on the block may be made with

a flange. The larger studs form an axis on which the table top turns "when raised from a horizontal into the upright position."

[Printed, 10d. Drawings.]

A.D. 1864, March 24.—N° 741.

EDIS, JOHN.—(*Provisional protection refused.*)—"Fastening table tops without the aid of thumbscrews." This is stated to be "an improvement upon an invention for which an application for a patent was made on the 22nd day of March, instant," to which the reader is referred. In the present case, there is only one stud in the upper plate, and consequently only one aperture in the lower one.

[Printed, 6d. Drawing.]

A.D. 1864, April 4.—N° 838.

BROWN, THOMAS.—"Improvements in military and other knapsacks or cases applicable as garments or receptacles for the body, and in combination with other appliances as mattresses, hammocks, life buoys, pontoons, tents, and coverings for troops and others in the field or camp, and for the protection of bodies generally from exposure to the atmosphere." The object of this invention is "to construct a mattress and cover to be used as a knapsack" or "as an appendage thereto," and applicable to a variety of purposes. The mattress, the dimensions of which are given, is "portable, cellular, and waterproof," and capable "of receiving the body of a man." The bottom or under portion is made double and is inflated through a small tube placed in any convenient part. The upper portion may be "of single sheeting." At the top and bottom is "a band of webbing of canvas;" round it are "lace holes (or loops or ties), through which a draw string or loop strings are passed." Across the middle is a band of webbing forming loops at the sides, and on each side are other two loops. In any convenient part, "distinct from the mattress or inflated portion," are "air valves with self-acting covers." The mattress cover is waterproof; it has eyelet holes all round, "and through the hem on one side is a draw string." The dimensions of the cover are stated. To carry out the invention a hood is required, "made of a finer waterproof material having a curtain to fall over the

"shoulders." The face of the hood "is in shape suitable to a man's face;" it is made "of any respirating material;" it is either fixed in the hood or capable of being lifted or lowered. Round the neck of the hood and bottom of the curtain is a "draw string." In combination with the foregoing are rods or poles having one end "spiked with steel or iron;" the other end of one rod is fitted with an iron tongue which fits into a socket on the other end of its fellow. Add to what has been described two "simple stands" and cords, and there are sufficient materials for making either of the articles mentioned in the title, or part of either. The method of converting the mattress and cover, or one of them, into the various articles and others besides is described in the Specification.

[Printed, 10*d*. Drawing.]

A.D. 1864, April 19.—N^o 979.

EDIS, JOHN.—(*Provisional protection only.*)—"An improved method of fastening table tops without the aid of thumbscrews." The fastening is effected by means of "two metal plates forming a lock." Drawings are given of two pairs; the upper plate in each is triangular in shape, the lower one triangular, but rounded off at one angle. In one pair the upper plate carries two buttons or headed studs, in the other two studs without heads. The lower plate in each pair has in it an aperture suitably shaped to receive both buttons or both studs.

[Printed, 6*d*. Drawing.]

A.D. 1864, April 27.—N^o 1054.

DURRIEU, LOUIS ADOLPHUS.—(*A communication from Charles Louis Victor Yon.*)—"Improvements in springs used in making seats, cushions, seat backs, pillows, mattresses, and similar articles." The wire of which the spring is made "is continued at each end," and bent into a "rectangular or other suitable shape." The springs are connected at top and bottom "with tape lapped over, which tape is treated with glue or varnish." By this arrangement the springs "form their own frame." For the edges of seats or cushions wire is bent as before stated, "but without any spring between." A sloping or tapering edge is made "by tying these to the tops and bottoms respectively of the last row of springs, and bringing their outer edges together."

[Printed, 4*d*. No Drawings.]

A.D. 1864, May 21.—N° 1281.

EDWARDS, JOHN.—“Improvements in the manufacture of fastenings for articles of dress and other purposes,” amongst which is “the suspending of curtains.” The fastening is a hook of any suitable size, formed “something like the letter S,” with one point projecting “beyond the bow;” this point “is made to enter the article to be fastened or suspended; the other point enters a suitably formed eye made on the article to be fastened, or enters an eye fixed on a ring, when a curtain or other article is to be suspended.” This hook is detached “by drawing the point out of the article as a pin is drawn.” Another hook is made with “one end shorter,” and turned in “towards the body of the hook;” and another with one end turned inwards, thereby forming a loop by which to sew the hook on.” The last two described are sewn on in the usual way, but do not require “to be cut off when the article requires washing.”

[Printed, 6d. Drawing.]

A.D. 1864, May 30.—N° 1337.

HALSE, WILLIAM.—“Improvements in tables,” especially loo tables. The improvements consist in the “form and arrangement of the screws and nuts,” by means of which the table top is connected to the upper block of the frame. The screws are “much shorter than heretofore,” and “have a plain and unscrewed portion on the inner ends thereof.” On the inner side of each clamp is inserted a metal nut whose flange is flush with the surface of the clamp. On each side of the block is a socket inserted in like manner. A thumbscrew of the above description applied on each side connects the top and block. The inner portion of the screws may be of smaller diameter; it may be made tapering; or the end may be conical, the socket being made accordingly. In “lower class” tables the nuts are dispensed with, and the screws, “formed with V threads, are tapped into the wood itself of the clamp.”

[Printed, 6d. Drawing.]

A.D. 1864, June 7.—N° 1415.

FRASER, JOHN.—(*Provisional protection only.*)—“Improvements in arranging and actuating window curtains, and apparatus connected therewith.” To carry out this invention there are employed, 1, a “projecting 2-sheaved upright pulley,” screwed

behind the cornice pole on the upper part of the window frame above the middle of the window ; 2, " a right-hand bevelled " 2-sheaved side pulley," screwed on the right hand side ; 3, " a " left-handed bevelled two-sheaved side pulley," screwed on the left hand side at the extreme ends of the window frame behind the pole ; 4, " two single pulleys " screwed to the window frame, one on each side (the spot depending on the cords) ; 5, " two cords " and two guide and connecting eyes, and wire stems to connect the " cords with the guide or leading rings of the cornice pole." The patentee describes his mode of adjusting the latter parts of his apparatus.

[Printed, 4d. No Drawings.]

A.D. 1864, June 8.—N^o 1423.

BRAGG, ASTON, and BRIDGEMAN, GEORGE WILLIAM.—(*Provisional protection only.*)—" Improvements in the construction of screws, whereby they are rendered applicable to lifting, " propelling, and to various other useful purposes." One end of a length of the screw is formed " with a socket and the other end " with a plug, and to unite one length to another the plug is " inserted in the socket and secured therein by a bolt and nut, " or bolts and nuts, or otherwise." By uniting a number of lengths in this manner " screws of great length and power are " constructed, and on having rotary motion communicated to " them are capable of being applied to many useful purposes," amongst them to " curtain rods or poles for carrying the rings " and the draperies or curtains connected thereto, so that they " may be extended or drawn together as required according to " the direction in which the screw or screws is or are turned."

[Printed, 4d. No Drawings.]

A.D. 1864, June 11.—N^o 1449.

TUCHET, SUSAN.—" Improvements in the construction of rollers " for window blinds." The reader will find a description of this invention in Abridgment N^o 3119, dated December 11th, 1863. In the present Specification is communicated the mode of closing the one half of the roller upon the other, namely, by a spring and catch, the latter being " formed with a sharp point to pass easily " through the blind ;" but other means may be employed, " such

"as moveable rings or sliding bolts at each end." Modifications also are given: "in place of attaching and holding the end of the blind by means of needles or points as previously described, a tongue or projection may be formed on one part or half of the roller and a groove on the other, between which the end of the blind can be inserted and held securely when the two parts are closed and fastened together." Or, instead of forming the roller in two parts or halves, "the end of the blind may be secured to the roller by means of a hinged or jointed longitudinal bar or flap, fitting the surface of the roller, and having points or other means of holding the end of the blind when inserted between it and the roller."

[Printed, 10d. Drawing.]

A.D. 1864, June 14.—N° 1466.

AGNEW, THOMAS.—(*Provisional protection only.*)—"Improvements in apparatus to be employed in the manufacture of picture frames and similar articles." The first part of this invention "relates to an improved description of saw-bench to be employed for cutting the wood used in the manufacture of picture frames and similar articles into the required widths and lengths, and for cutting the ends of such pieces at an angle of 45 degrees to form the corner or mitre joints." Angle pieces are employed; they are placed "at an incline of 45 degrees" and "slide in grooves or guides formed in the bench." The pieces of wood are placed against the angle plate, "which is advanced so as to bring the wood against the circular or band saw;" this "forms the end as required, and leaves a smooth surface ready for glueing and securing together." The shaft which drives the saw is to be made capable of being raised or lowered, "so that the saw may be adjusted to cut different depths." The second part "relates to the securing of these mitre joints together, and the means employed for holding the wood whilst the corners are secured." The apparatus for this object consists of "two bars supplied with clips to hold the wood and moved by screws at right angles to each other;" by aid of this "the joint can be perfectly fitted and glued and held in the position until one or more staples, brackets, or binding pins or wires are driven deeply into the inner side or rebate of the frame."

[Printed, 4d. No Drawings.]

A.D. 1864, June 23.—N° 1575.

WILLIAMS, WILLIAM GEORGE, and FRASER, JOHN.—(*Provisional protection only.*)—"An improved spring hook or fastening for suspending or securing curtains, garments, fabrics, jewellery, and other articles of furniture, upholstery, ornament, or apparel." The hook is made of wire or steel "in an irregular, hooked, circular, elliptical, or other form, so as to adapt it to the purpose for which it is required, and having one end sharpened." The sides of the portions which are near the ends are "curved and carried along each other in reverse directions for a necessary distance from the ends," and in such a manner as to cause them "to press and spring against each other."

[Printed, 4d. No Drawings.]

A.D. 1864, June 24.—N° 1586.

GEDGE, WILLIAM EDWARD.—(*A communication from Jean Louis Margoton.*)—(*Provisional protection only.*)—"An improved bedstead." The frame is of wood, composed of two side pieces and two end pieces about nine inches high. Towards the middle "of the fore part of the frame and on its inner face" are "two lintels forming a slide or groove, and serving to support fourteen cross pieces or laths." The laths are joined two and two together; the springs, "which are five in number to each row," are screwed to them "by their centre" at about eight inches apart. By this arrangement a double spring frame is obtained which may be turned at pleasure, one on each side of the laths. The springs are retained in their respective position by "a succession of squares like a draught board;" these are attached to flat or cylindrical bands which pass through ring bolts on the sides. The patentee describes the length of his bedstead and the length and thickness of the several parts of the frame.

[Printed, 4d. No Drawings.]

A.D. 1864, June 27.—N° 1604.

ASKEW, JOHN.—(*Letters Patent void for want of final Specification.*)—"Improvements in the construction of go-carriages for teaching children to walk, and giving assistance to invalids, and for other domestic purposes." This carriage is "manufactured in iron, brass, steel, and other metal;" the lower rim carries

"three or more upright telescopic tubes," the bottom of each being "supplied with a spiral spring to give elasticity to the upward part of the carriage." The tubes "have adjustable set screws to regulate the height of the upper rim" and "joints at the top and bottom." The upper rim is constructed with a door and "provided with a safety lock and suspension belt." The carriage moves on castors made of brass or other metal with india-rubber rollers; it is "to be constructed with joints and set screws so that it can be taken to pieces."

[Printed, 4d. No Drawings.]

A.D. 1864, July 1.—N^o 1644.

MCCGWIRE, EDWARD THOMAS ST. LAWRENCE.—"Improvements in the means or method of slinging hammocks for military and other purposes." Two staves of wood or metal tubing made each in one piece or in two pieces screwed together, ropes, and pegs or eyebolts, are employed. To suspend a hammock on the ground, the staves are stuck in at about an angle of 55°; a rope is passed round the head of each and tied at its ends to pegs hammered into the ground; the hammock is slung to the top of the staves by clew cords attached to eyelets therein. A blanket, a net, or a soldier's overcoat or cloak, may be used as a substitute for a hammock. In a room or on shipboard eyebolts are used. Each end support is fixed as follows:—A rope is passed from one eyebolt round a groove at the foot of one staff and is tied to another eyebolt; another rope is passed from the one eyebolt round the head of the staff and is tied to the other. To prevent the staves from slipping, "a wooden shoe or rest for the insertion of the foot" of the staff is used; each shoe is furnished with either an eyebolt or hole or groove for the rope to enter. Two or three staves may be employed at each end.

[Printed, 8d. Drawing.]

A.D. 1864, July 11.—N^o 1719.

STICKLAND, JAMES.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for laying veneers on to surfaces," that is to say, "on to the surfaces of cylindrical or round pieces of wood, such as curtain poles." Such a piece of wood, together with the veneer to be laid thereon, is placed "between two horizontal or inclined flat surfaces or tables that

"are made to exert a pressure upon them," and then (the veneer having been previously coated with glue) is imparted "to the one flat surface or to both such a motion relative to the other as to cause the piece of wood situated between them to roll upon and take up the veneer as it passes over the same, the pressure exerted at the same time by the two flat surfaces or tables being sufficient to press all the superfluous glue from between the piece of wood and the veneer, and to cause the latter to adhere firmly to the former." The following is the arrangement preferred:—The lower table is stationary, of metal, and heated to the required degree for keeping the glue fluid; the upper table is moveable, of iron or wood, and by preference "cooled by means of cold water, so as to cool the glue as the veneer is pressed to the wood." To the upper table "are attached one or more racks, in gear with which are one or more pinions carried by the framework of the lower table, through which pinions the upper table receives its motion; it is guided and kept at the requisite distance from the lower table by means of one or more adjustable rollers carried by the latter." The pressure is obtained either by the weight of the upper table or by springs and rollers made to press thereon.

[Printed, 4d. No Drawings.]

A.D. 1864, July 25.—N^o 1843.

FRASER, JOHN. — (*Provisional protection only.*) — "Implements in arranging and actuating window curtains, and apparatus connected therewith." If a window is furnished with two curtains, a double sheaved pulley (or two pulleys) is fixed above the middle of the curtain pole, with its axis in a vertical position, by means of a hinged band, "the ends of which overlap and are fastened together and round the pole, by a screw rose." The pole is secured in brackets having curved tops, hinged backs, and overlapping fronts which are fastened by a screw rose; on the top of the hinged part is mounted a single sheaved pulley "the axis of which is placed vertically, and immediately above the centre line of the pole." To the same piece is attached a double sheaved pulley, whose sheaves "work on a horizontal axis at a right angle or nearly at a right angle, with the centre line of the pole." The patentee describes his methods of attaching the cords; in one the single pulley is not required, in

another, "the centre band and pulley;" and this last named pulley is not needed, if the window has only one curtain. A guide is used "for attaching a window curtain cord to one of the leading rings of a curtain; and also for the purpose of guiding that ring as it is drawn along the pole;" it is composed of "a piece of brass straight at top and rounded at bottom," with a screw eye or hole at the top and another at the side, and of a band of pliable sheet metal perforated and slotted. The band is united to the side of the guide piece by a screw which passes through one of the slots into the hole in the side. The action of the guide is detailed.

[Printed, 4d. No Drawings.]

A.D. 1864, July 29.—N° 1889.

NICKLIN, JOSEPH.—"Improvements in the manufacture of hooks to be used for the suspension of curtains, and various other purposes." In this invention are combined "the principle of the hook, the loop or the ring with the safety pin, or the spring pin with protected point." One end of the wire having "been bent up and round" into a hook, the wire "is thrown out" into a shield; it is then produced and coiled to form a spring for the remainder or pin part. Several modifications are described, the chief of which are, 1, the hook may be omitted, and the produced part may have an extra coil in the middle, into which a free hook or ring may be introduced; 2, the shield may be made by a single bend; 3, the shield may be omitted, the point "being partly protected by its contiguity to the bend of the hook;" 4, the shield may be of thin metal and clipped to the neck of the hook.

[Printed, 10d. Drawings.]

A.D. 1864, July 30.—N° 1900.

PAYTON, WALTER, and STANLEY, JOHN.—"Improvements in fittings for suspending or otherwise supporting hats when not in use." These fittings are "constructed of metal, wood, or any other suitable material," and "shaped in the form of a bow, or in any other suitable manner, having one open side, and so arranged as to admit of being screwed or otherwise fastened to the under side of seats, tables, or shelves, to vertical

" surfaces, and in other suitable places, their purposes being that, " when a hat is passed between such open side, it may be suspended or otherwise supported by means of its brim." The patentees prefer the bow shape, but they make fittings " of two or more pieces not made into a bow;" and for vertical surfaces they " prefer to combine with such fitting any suitable form of " hook upon which to hang coats and such like articles." Again, in lieu of fixing their fittings entirely, they propose to make them sometimes " of suitably shaped frames and so arranged that they " may be drawn in and out of any suitably shaped slides, or turn " upon a vertical axis carried upon one of their sides."

[Printed, 8d. Drawing.]

A.D. 1864, August 1.—N° 1909.

EVERARD, JOSEPH.—(*Provisional protection only.*)—" Improve-
ments in the rollers of window and other blinds, and in support-
ing blind rollers, and in raising and lowering window and other
blinds." The roller is made capable of expanding and contracting
in length so that it can be used with windows of different
width. It consists " of a piece of metallic open-jointed tubing;"
and to one end is attached the cord pulley in the following
manner:—The pulley " carries a short tube of such a diameter
" that it fits tightly in the hollow roller;" one end of this tube
has a pin or projection, and in the roller is a slot T-shaped, and,
when the tube is pushed home and turned to the right or left, the
pin enters the cross slot. This pulley carries one end of the roller
axis, and the other end of the axis is fixed as follows:—" The
" ordinary flange carrying the axis is provided with a short tube
" capable of sliding in the end of the roller. A longitudinal slot
" is made near the end of the roller," a screw pin on the tube
engages therein, and the roller is lengthened or shortened by
sliding the tube in or out. The blind is attached " by being con-
nected to a narrow strip of wood or metal, which on the removal
of one of the ends of the roller can be passed into the hollow
roller, the blind hanging through the slit." The supporting
brackets are made " of a cup like form, into the base of which a
" screw is fixed by the edge of the cup being turned or burnished
" down upon a flange or large head of the screw." The follow-
ing is the arrangement for raising and lowering blinds:—On the
outer side of the cord pulley is a ratchet wheel, and below the

ratchet "an arm or lever turns in a vertical plane;" its upper end engages with the ratchet, and the blind cord passes through a hole in the "lower and heavier" end.

[Printed, 4d. No Drawings.]

A.D. 1864, August 3.—N° 1935.

COOKE, EDWARD.—(*Provisional protection only.*)—"Improvements in metallic bedsteads, cots, and couches, and other articles of like manufacture," for the purpose of strengthening the side and end rails. Underneath the horizontal portion of each rail (which is of angle iron) "one or more struts or short uprights" are fixed at right angles to the rail; a rod of wrought iron is passed through a hole in the strut or struts, its ends being secured "in the block on the ends of the rail, by the block being cast on the ends of the rail and the ends of the said rod at the same time." Or the rods may be united to the struts "by means of small connecting pieces cast on the struts."

[Printed, 4d. No Drawings.]

A.D. 1864, August 8.—N° 1969.

GEDGE, WILLIAM EDWARD.—(*A communication from Charles Narcisse Dreville.*)—"An improved caster," named by the inventor the equilibrium castor. He claims for it the advantages of an invariable equilibrium, a very much reduced and easy friction, simplicity, and strength. The castor is composed of, 1, a washer "cut square" behind; 2, horns bearing against the square portion of the washer; 3, a balance plate or see-saw, whose axle passes through holes in the sides of the horns; 4, a stem or rod "passing through the centre of the washer and the balance plate, and having at its head either a pin or a screw to keep the whole in place." Between the washer and the horns at the point of bearing, and in a horizontal direction, a space is left "with the object of favoring the contact of the washer and the balance plate." The square part of the washer serves as a stop to the horns, so as to prevent them "from turning over when the piece of furniture is lifted." A modification "represents another arrangement" of the horns; they are "let into the washer while preserving their freedom of action, and thus offering a second means of preventing the caster from turning over when the piece of furniture is lifted." To prevent the wheel of the

carpet from getting between the horns and the roller, each side of the latter has in it a groove or simply a hollowed part, and on the inside of each horn is a copper or other suitable washer, so as to "form but one single piece without any join." When the roller is grooved, the washers carry each a crown "which penetrates into the groove;" when it is made with hollowed sides, the washers are flat and fit the hollows perfectly. "The principle upon which this improved caster is based may be applied with great advantage to cranes." Suppose the castor to be turned upside down; the stem "would be set in the masonry;" the horns lengthened would form the arms; a windlass would be placed behind on the washer extended, so that the whole might turn round the stem; and, in order that the whole weight of the load should not be borne by the stem, the washer might be "slightly thinned at the back;" or the same effect might be produced "by giving an extra thickness to the balanced plate."

[Printed, 10d. Drawings.]

A.D. 1864, August 9.—N° 1975.

CROOK, EDWIN, and CROOK, FREDERICK.—"Improvements in the construction of brackets for supporting banner screens, reading desks, and other articles." The bracket is composed of a clip or other fastening, two parallel bars, and an arm; the bars are hinged at their inner ends to the clip, "so that they may be free to turn to the right and left." They "are divided and united at each end by two small vertical junction bars," which "always maintain them parallel." The arm is hinged to the outer junction bar. To support a banner screen, the outer end of the arm carries a ring or is formed with a ring through which a rod passes at right angles; and on the rod are rings with hooks for the suspension of the screen. A reading desk, a table, or a stand is supported by its stem fitting into a socket at the end of the outer junction bar or of a short arm. An adjusting screw, working into a rack if required, is fitted to the junction bars, in order to prevent the parallel bars "moving by the weight of a heavy book laid on the desk at the outer end thereof."

[Printed, 8d. Drawing.]

A.D. 1864, August 18.—N° 2051.

YVOSE-LAURENT, LEWINSKI.—"An improved military outfit for soldiers in campaign, intended to protect the men, their

“provisions and ammunitions, against dampness and rain, and also for several other useful purposes.” This outfit or “encampment carpet” is a piece of air and water-tight cloth provided with metallic eyelets at the corners, buttons and button holes on one side, and a strap and buckle on the other. The first are used when suspending the carpet; the second when joining several carpets together; the third when the carpet is worn over the shoulders.

[Printed, 2d. Drawing.]

A.D. 1864, August 18.—N° 2055.

DÉSUMEUR, JEAN CHRYSOSTOME.—(*Partly a communication from Napoleon Prazel.*)—(*Provisional protection only.*)—“An improved spring mattress.” Straps are stretched lengthways upon “a square open frame;” one end of each strap is nailed or otherwise fastened to a cross bar; “the other end is attached to a spiral or other suitable spring fixed to the opposite cross bar.” The straps “are connected and kept extended flat side by side by means of a cross strap stretched over the entire series, or alternately passed over one strap and under the one next following.”

[Printed, 4d. No Drawings.]

A.D. 1864, August 25.—N° 2103.

NEWTON, ANN.—(*Provisional protection only.*)—“An improved apparatus for receiving or holding clothes, ornaments, or other articles,” consisting “of a chamber or receptacle in which is a column, pillar, rod, bar, frame, or stand capable of revolving wholly or partially round, and carrying hooks, trays, or other appliances.” The chamber, mounted on castors or rollers, is made either with sides and a door, or of framework provided with draperies; or the framework may be constructed “of tubular metal rods jointed or connected together” so that it can be readily taken to pieces.

[Printed, 4d. No Drawings.]

A.D. 1864, August 27.—N° 2117.

JOHN, ELIZABETH.—(*Provisional protection only.*)—“Improvements in the construction of bedsteads.” The posts are made to fold at any suitable part above the mortise holes; the

rails are jointed in the middle ; the top sides "are furnished with studs which take into rings attached to or eyelet holes provided in the bed sacking." The ends of the rails have holes on their under side for the reception of hooks "secured to or upon the sides of the four bed posts ;" or the rails may be connected to the posts by other contrivances.

[Printed, 4d. No Drawings.]

A.D. 1864, September 6.—N° 2180.

SHARP, ANDREW—(*Provisional protection only.*)—"Certain improvements in cabinet bedsteads." The "most important part" of this invention is "the application and adaptation of ornamental and strengthening joint pieces of metal" to the head and foot frames of bedsteads ; these parts are constructed of ornamental work, the various portions being united "by metallic sockets and tubular joint pieces."

[Printed, 4d. No Drawings.]

A.D. 1864, September 16.—N° 2262.

BARON, STANISLAS ANTOINE—"An improved so-called bed table." The table is composed of a hollow pillar resting on a claw whose front is made to draw out, a curved rod sliding in the pillar and held at any height "by means of a rack with stop or pressure screw," and a table top carried by the rod. The top is provided at the middle of its under side with a socket or boss for the reception of a straight rod, which replaces the curved one if it is wished to convert the table into "an ordinary ladies' work-table."

[Printed, 6d. Drawing.]

A.D. 1864, September 16.—N° 2263.

BARON, STANISLAS ANTOINE—"An improved bedstead." It consists of "an ordinary bedstead frame made either of wood or metal or metal and wood combined." At the head and foot are two boxes divided into compartments ; these form cupboards and drawers which contain a variety of articles for toilet and chamber use. The mattress is placed between the boxes. "At the head, in order to supply the absence of the mattress, the box is covered by a cushion ;" at the same end is a hinged rod

"fixed against one of the bedstead panels, and carrying a small
"tablette or table top."

[Printed, 6d. Drawing.]

A.D. 1864, September 27.—N° 2368.

ORTH, WILLIAM HENRY.—"An improved article of furniture," namely, a chair or stool having a box or frame secured to the framework below the seat "and occupying the space usually left
"vacant between the legs." The box is fitted on one side with two drawers provided with spring fastenings, on the other with a recess closed by a hinged flap which is fastened by a spring catch. The drawers are divided into compartments to contain articles "to
"suit the intended purpose to which the chair is to be applied."

[Printed, 8d. Drawing.]

A.D. 1864, October 12.—N° 2517.

JONES, JEROME VALENTINE, and WILLIAMS, GEORGE JAMES.—(*Provisional protection only.*)—"Certain improvements
"in the manufacture of cornice poles, which improvements are
"also applicable for other purposes." A wooden body of the required shape is inserted into a thin metal tube which is rather larger than the intended size of the cornice pole: the tube is drawn through a hole of the proper shape "at a common draw
"bench" until it fits "tight and close around the wood body." If a "florid embossed ornament" is desired, the reduced tube with the body inside is passed "between two or more rolls
"having the desired design sunk around their peripheries." Or any ornament or design may be formed thereon in the ordinary manner.

[Printed, 4d. No Drawings.]

A.D. 1864, October 21.—N° 2611.

ALLCOCK, THOMAS.—"Improvements in the manufacture of
"metal cornice and other poles and rods and mouldings for various
"purposes of utility and decoration." By aid of this invention
"enrichments which would otherwise be exceedingly costly to
"produce can be obtained very economically." Poles, rods, and
"mouldings of any desired section," are made "from thin tubes
"or sheets or strips of metal, drawn with fins, beads, or grooves

"upon them, flanged inwards" in such manner that between each pair of fins, &c., "a space is left for the reception of ornamental bands of metal or other decoration." The bands are slid into the grooves or between the fins or beads, and the inside of the tube, &c., is filled with wood or metal or other solid substance. The rods and poles may be made in various ways:—1, of wood, partly covered with brass and having sunk on its face a groove in which is slid an "enriched band" held in its place "by the overlapping edges;" 2, of wood, grooved in one or more places to receive a band or bands; 3, for blind laths, "of iron covered with brass or of solid brass, and turned over or flanged to receive an enriched band;" 4, for stair rods and picture rods, "of wood covered with iron and again with brass," or with cased tubing, the band being clipped between the overlapping edges; or "of oak or other valuable wood, polished and ornamented by the introduction of the enrichment inserted between the fins or flanges." Stair weights are "formed by filling a metal casing with lead and introducing the ornamental band in the manner already described." The bands may be of metal, glass, carved wood, stamped leather, papier mâché, china, vegetable ivory, enamel, or strips of velvet or other textile manufacture.

[Printed, 10d. Drawing.]

A.D. 1864, October 29.—N° 2683.

LARKIN, HENRY.—(*Provisional protection refused.*)—"Improvements in hooks," adapted for "securely connecting together detached articles of various kinds, also for suspending curtains and other fabrics." These hooks are made in various ways:—1. "A double hook, by so shaping a piece of metal that the middle part of its length may be formed into a kind of shank, and its ends bent over side by side, in a reverse direction, so as to enclose a space like the link of a chain, with a spring entrance or exit on either side. These hooks may be made with either double or single shanks; they may also be made in the form of links without any distinct shanks." 2. "A hook with a snap fastening;" it may be formed "by bending a piece of metal into three loops, the first and largest loop forming the hook itself, the end of which is turned over to form a catch, the second loop forming a shank, and the third and smallest loop forming an eye, into which the catch of the hook springs and fastens."

3. "A combined snap hook and spring pin, by forming a piece of metal into three nearly parallel lengths;" the first and second constitute the hook and stem, "the end of the hook being turned over to form a catch," and the third, a pointed pin. Near one end of the intermediate length is a cross loop to hold the end of the pin when pressed into it, and near the other end is a circular loop for holding the catch. "Another arrangement of this pin hook may be produced from a slip of metal with two prongs, so bent that the two prongs may form two pins, fastening into two catches proceeding from the sides of the hook stem, while the end of the hook, by means of two other side projections, catches in between the roots of the prongs." 4. "A simple hook may be used in combination with either one or two prongs or pins, and without any catch or spring fastening, either to the hook or the pin."

[Printed, 4d. No Drawings.]

A.D. 1864, November 11.—N^o 2808.

GEDGE, WILLIAM EDWARD.—(*A communication from Jules Leclerc.*)—(*Provisional protection only.*)—"An improved sanatory toilet apparatus;" namely, a bidet, the exterior of which presents "the appearance of a small chest of drawers, the height varying from 16 to 18 inches." A hinged lid is prevented by stops from opening too far back. Inside is a moveable frame, beneath which is a vase of porcelain, or other suitable material, fixed by screws. At one side is a crank which turns a shaft extending from side to side and mounted on bearings, one of which has a moveable cap. On the shaft are two "funnel-shaped compressors," kept in place each by a small spring; between them is a sponge, and behind is a curved brush for cleaning the sponge, carried by a light bar. To the apparatus is added an enema, which is worked by a small crank. A basin below receives the water from the vase; the "running off is effected by the aid of a tap."

[Printed, 6d. Drawing.]

A.D. 1864, December 1.—N^o 2993. (* *)

SOPER, JOHN.—"Improvements in the means of raising and lowering weights, applicable to Venetian blinds, curtains, and other purposes."

The leading features of this invention are thus set forth :—

“The object of my invention is to raise a weight by means of a cord and pulley in such manner that on the hauling part of the cord being released from the hand the weight shall not run down, but shall remain at the altitude at which it may happen to be until released by the pulling of another cord. My invention consists of an improved appliance for effecting the above object. I use a pulley working in a block which is one arm of a cranked lever, which lever works upon a pin or pivot in a frame or box ; the cord is passed over the pulley in such manner as to pass also between the outer arm of lever and the frame or box, thus pressing the part of the cord which passes between them, and preventing the weight from running down ; the release of the cord is effected by another cord connected with the check arm of the lever, by pulling which the lever is oscillated on its axis, the pressure removed, and the weight lowered. If more than one cord be required to raise the weight, two or more pulleys may be used, mounted in levers working on the same axis, but moving independently of each other. The apparatus may be made of iron, brass, or any other metal, and is peculiarly adapted for Venetian blinds, curtains, and other like purposes.”

[Printed, 8d. Drawing.]

A.D. 1864, December 2.—N° 3004.

KITTLE, SAMUEL PARKER.—“Improvements in folding spring mattresses,” that is to say, in arrangements for folding a spring mattress, for bracing and strengthening certain parts, and for elevating and supporting the head portion. The case “containing the stuffing” is tacked or otherwise fastened all round to the sides of the box which holds the springs, “or to the box and hinges, or to the hinged slats ;” it is attached “in gathers or with a gore at the hinges or points where the mattress is folded.” The springs rest upon cross slats, their upper ends being kept in place by cords, or by securing them to the under side of the case. The box is made in two or in three sections (according as the stuffing is thick or thin), and joined by suitable hinges, different kinds of which are described. Triangular blocks, or rectangular or stiffening pieces, are placed between the slats and the sides where the box “is weakened by the cut or cuts for folding.” The

head part is raised by an extra section of the box, which is hinged at top to the rest, and by an elevator hinged at one end to a slat, and formed at the other with a rack which takes into a slat in the extra section. Sometimes the middle of the box is replaced "by contiguous slats," hinged to each other and kept in position by an interlacing of webbing. Sometimes the sides of the box are replaced by "coiled springs laterally braced" by spring braces; the lower ends of the braces are secured to the slats, and their upper ends are fastened to the coiled springs above the middle and below the upper coil.

[Printed, 2s. 10d. Drawings.]

A.D. 1864, December 5.—N^o 3019.

HESELTINE, GEORGE.—(*A communication from Myron Perry.*)—"An improved combined infant tender and exercising apparatus." It is composed of, 1, a "quadrilateral framework" secured at the bottom ends to a suitable seat, and at the "top to a canopy;" 2, side boards grooved on the inside; 3, a table sliding in the grooves, and sliding in grooves in each side of the seat, when it is to be used as the foot of a couch; 4, two seat cushions, one with a hole through it; 5, an adjustable seat back; 6, a post (which "may be carved to any figure") projecting "through near the middle front edge" of the seat; 7, a removeable box ("with three inclined sides, "a bottom, and a perpendicular side in front") having a footboard hinged near the bottom; 8, a pedal and its appurtenances; and, 9, straps and springs for connecting and adjusting the several parts. The whole may be mounted on castors or set upon a carriage. Three modes of suspending the chair part are described; first, from a ceiling, when there are required a coiled spring having a ring at top and a strap and buckle at bottom, and a hook and ring to which ropes on the frame top are connected. Second mode; a pedestal mounted on a platform carries a lever; from one arm a bail is suspended by a loop and staple. The ends of the bail are bent inwards into hooks, and on each leg is a projection; these and the hooks enter holes in the chair. The other arm of the lever is notched; in two of the notches are loops; to one is attached a coiled spring, having at its lower end a perforated strap, the holes admitting a peg on the platform; and from the other loop hangs a rope fastened to a pedal.

The mechanism of the third support is partly contained in a box ; the chair is fixed on a stem fitted into a socket in a standard ; it is secured by a cross bar hooked at one end, and having at the other a turned up lip, through which a pin is passed into the chair. The standard receives motion from two parallel levers, one of which carries a notched bar. In one of the notches is the looped end of a coiled spring, and a rope attaches the other end of the spring to a windlass. A hobby horse can be fixed on the stem when the cross bar is taken away. The standard can be lowered into the box, which may then be converted into an ottoman or into a crib.

[Printed, 1s. Drawings.]

A.D. 1864, December 6.—N° 3040.

ROBINSON, ARTHUR HENRY.—(*Provisional protection only*).—

“ A combined stretcher bed, cushion, and wrapper, for use in “ railway and other travelling carriages.” The apparatus consists of, 1, a metal frame, “ part of which slides within the other ;” 2, cross bars “ made in two parts each hinged or jointed to the extensible “ side frames and capable of being locked when placed trans- “ versely across the frame by sliding plates or tubes ;” 3, a cloth or canvas sacking stretched on the frame ; and 4, an air cushion to form a pillow attached to one end of the sacking. “ Cords or “ other convenient attachments are secured to the outer ends of “ the sliding parts of the frame.”

[Printed, 4d. No Drawings.]

1865.

A.D. 1865, January 4.—N° 24.

VERICCHIO, DIONISIO.—“ Improvements in the construction “ of spring mattresses and paliasses.” Two frames of angle iron are constructed with flat bands of iron or steel attached to them lengthways and crossways. One frame is placed upon the other, “ the flanges being turned to each other so as to form ledges,” and a spiral or other spring is fixed “ between each intersection of “ the iron bands, or some of them.” One carriage spring, “ or

"any other shape of spring," is placed at each end, and one or more similar springs on each side, between the frames. Sometimes the under frame is dispensed with, and the upper frame and springs are "supported directly on an iron or wooden bedstead."

[Printed, 4d. No Drawings.]

A.D. 1865, January 7.—N° 58.

ATKINS, JAMES. — (*Provisional protection only.*)—"Improvements in the manufacture of metallic bedsteads, which improvements are also applicable to the manufacture of other metallic articles." The patentee describes his invention "in connection with the manufacture of the foot rail of a metallic bedstead." The ornamental centre or other piece by which the rods or tubes are to be joined is made of brass or other metal, hollow, and in one or more parts. A portion of the rods or tubes is inserted into holes in the ornament, if it is made in one piece, otherwise between the parts; and "melted lead, zinc, or other easily fused and cheap metal or alloy" is poured into the interior, "so as to fill the ornamental piece therewith, and secure the rods or tubes therein."

[Printed, 4d. No Drawings.]

A.D. 1865, January 11.—N° 87.

GEDGE, WILLIAM EDWARD.—(*A communication from François Carré.*)—(*Provisional protection only.*)—"An improved elastic mattress or bedstead." Arched laths of steel extend from side to side of the frame; they are strengthened at each end by a small blade or plate of steel; a small iron plate is added, and the three are fixed by the same rivet to the sides. A steel blade extending the length of the frame is riveted to each lath and to the ends of the frame "in the same way" as the laths. At each end two blades are riveted at one extremity to the frame and at the other to the extreme cross lath. Three round iron cross pieces "consolidate the frame." Right and left of the longitudinal blade three straps unite the laths. Legs folding inwards may be placed at the corners.

[Printed, 6d. Drawing.]

A.D. 1865, January 12.—N^o 99.

HUGHES, EDWARD THOMAS.—(*A communication from Jeanne Lelarge.*)—"Improvements in elastic mattresses and bedding." The top of the mattress is "a metallic network," composed of "wire springs interlaced into each other;" a rod is passed through each of the springs at the upper and lower extremities. To each rod are hooked rods having a ring at the other end; through these rings and other rings screwed to the end cross bars a cord is passed, tightened and made fast. The sides of the network are fastened by rings or hooks to wire ropes. At the ends of the side bars are brackets, "those at the head being a little higher than those at the foot;" each "carries at the top a plate having in the interior cheeks or sides like part of a hinge, and through these cheeks is passed a metal pin, to which pin are hooked or fastened the ends of the longitudinal wire ropes." To the brackets also are fixed the end cross bars. The side bars are divided each into two parts. The springs are fastened to and rest on cross laths underneath the network. Sometimes the springs are omitted, the network being "of sufficient elasticity." The whole "may be transformed into a spring bedstead by connecting legs to the longitudinal bars of the framework, and a head and foot board to the cross bars."

[Printed, 8d. Drawing.]

A.D. 1865, January 18.—N^o 149.

DEANE, EDWARD.—"An improved kind of bedstead, suitable for camp and domestic purposes." It consists of two side bars of solid or angle metal, or of tubes, three stretchers, and six legs. The side bars have a handle at each end and are jointed in the middle; the stretchers are of solid metal jointed in the middle and to the bars; the end stretchers when extended are kept rigid by spring bolts, the middle one by a sliding cap. The end legs are pinjointed to the bars, and connected to them also by diagonal ties which are pinjointed at their lower end to the legs, while the upper end carries a stud which slides in a slot or groove in the bar. The upper portion of the middle legs is branched; the branches are united by a pinjoint, and their tops are similarly jointed to the bars. The sacking is laced to holes in the bars.

[Printed, 8d. Drawing.]

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A.D. 1865, January 23.—N° 193.

BADCOCK, JAMES.—(*Provisional protection only.*)—"Improved method for the suspension of curtains." Hooks or any other metal fastenings "are affixed to a tape or band of any material, by means of eyelets, sewing, or any other fastening, at regular distances." The tape is to be sewn to the curtain.

[Printed, 4d. No Drawings.]

A.D. 1865, January 23.—N° 195.

TEMPLEMORE, ELTON.—(*Provisional protection only.*)—"An improved window blind cord check," to be used as a substitute for the ordinary rack and pulley. A ring has secured to it one end of a piece of strong elastic or elastic tape, the other end being fastened to a button or clip which is nailed or screwed to the window frame; the blind cord is passed through the ring. "By holding the ring and stretching the elastic upwards," the cord will be slackened and the blind will be lowered by its own weight.

[Printed, 4d. No Drawings.]

A.D. 1865, January 23.—N° 196.

DREVELLE, ADOLPHE.—(*Provisional protection only.*)—"Certain improvements in rendering soundless furniture and other articles for domestic purposes." The patentee applies "internally or externally to the extremity or foot of an article of furniture, china, glass, or pottery, a small appendix of caoutchouc, gutta percha, cork, or of any similar substances."

[Printed, 4d. No Drawings.]

A.D. 1865, January 23.—N° 199.

BROWN, THOMAS.—"Improvements in folding chairs and other seats." Two frames, one longer than the other, are employed, crossing each other and pin-jointed; the longer has at its upper end a rail to support the back of the sitter, and lower down a cross rail to connect the sides of the frame. The seat is jointed to the upper end of the shorter frame; between it and the frame are "distance pieces" to allow it to be folded down; it is formed of side rails and cross bars, and, when the chair is set up, the cross rail (which is notched to receive the side rails) enters one of the spaces between the cross bars. Stops on the longer frame "limit

"the motion of the seat;" shoulders on each side of the seat prevent it from being pushed too far back; studs at the back of the seat come against the stops "when the seat is drawn forward in folding the chair," and projections at the top of the stops hinder the seat from "being lifted higher than is necessary to free it from the cross rail." To obtain greater rigidity the side bars of the shorter frame may be connected at their upper ends by a rail to which the seat is hinged.

[Printed, 10d. Drawing.]

A.D. 1865, February 1.—N° 280.

GEDGE, WILLIAM EDWARD.—(*A communication from Louis Lopera, junior.*)—(*Provisional protection only.*)—"An improved "portable folding arm chair or seat." It is composed "of four "moveable parts united by hinges;" the parts are the seat, a frame forming the back, and two frames for arms. The parts fold "the one into the other so as to form a box, which is closed "by a couple of catches or otherwise."

[Printed, 4d. No Drawings.]

A.D. 1865, February 4.—N° 317.

ROBINSON, ARTHUR HENRY.—(*Provisional protection only.*)—"Improvements applicable to air cushions, mattresses, portable "baths, and other like air-inflated articles." In closed articles "two separate and distinct inlets for the air" are employed, each provided with a closing valve. One inlet "communicates with a "series of india-rubber tubes, arranged either in the form of rings "communicating with each other by lateral orifices, or in the "form of a tubular coil, whilst the other inlet communicates "with the main cavity or space of the pillow or cushion, which is "enclosed or bounded by the tubes." The ends, "which may "be flat or hemispherical, are made double, leaving an air space "between the two thicknesses;" this air space is in communication with the tubes, "or when of a flat form, in lieu of being "made of double thicknesses of material, the ends may be composed like the sides of a number of tubes placed side by side, "but communicating with each other, and with the tubes forming "the sides." The mattress consists of a number of tubular chambers, each "being composed of a series of rings, or a coil of "india-rubber tubing." One air inlet "communicates with the

"tubes," the other or others "with the interior of the chambers." Baths and other open inflated articles are "composed of india-rubber tubes, disposed either in the form of rings or coils passing round and forming the sides and bottom;" the tubes are inflated by forcing in air through a self-closing air valve.

[Printed, 4d. No Drawings.]

A.D. 1865, February 20.—N° 476.

SHARP, ANDREW.—"Improvements in the construction of cabinet, sofa, and chair bedsteads." This invention consists "in joining together the framework of the bedstead proper by cast-iron binders." The ends of the cross laths, dovetailed, or having a hole drilled through them, or having a pin or pins fastened into them, are placed together with the side rails in chills formed with suitable cavities, and melted metal is poured in. The clamps may be cast on separately, but the patentee prefers "to employ large chills to hold each division of the frame-work at once." The cross bar which joins the middle legs, and the ornamental ends at the head and foot are fastened on in a similar manner.

[Printed, 8d. Drawing.]

A.D. 1865, February 24.—N° 525.

ROWE, CHARLES JAMES.—"Improvements in portable invalid or bed tables." The table is from eight to ten inches high, and is intended to stand on a bed. Each pair of legs is connected by a cross bar which is hinged to the frame; a thumbscrew entering suitably placed sockets keeps the pair firm "either in the collapsed or extended position." The top may be a fixture, or hinged to the frame and capable of forming a writing or reading slope, or part of the top may be so arranged. The slope is furnished with the usual strut and rack, with a head at the lower part, and with a thumb ring which serves both for raising the slope and actuating a catch which fastens the slope down. A drawer or drawers may be added.

[Printed, 8d. Drawing.]

A.D. 1865, February 25.—N° 537.

ASKEW, JOHN.—"Improvements in the construction of a portable vehicle for teaching children to walk, and giving assistance

"to invalids." The vehicle is composed of an upper and a lower rim, both of metal and by preference circular; the former is provided with an opening which is secured by a thumbscrew or a lock and key; the latter is mounted on castors rendered soundless by a covering of india-rubber or other substance. To the upper rim are pin-jointed three or more slotted tubes, and similarly fastened to the lower rim are as many tubes or rods sliding in the upper tubes and carrying each a pin which enters a slot. The sliding is retarded by springs coiled round the rods, and the height of the vehicle is regulated by thumbscrews and collars at the lower end of the outer tubes.

[Printed, 8d. Drawing.]

A.D. 1865, February 27.—N^o 542.

WHITING, CHARLES. — "Improved portable frames and joints for tables and other articles, applicable also for building purposes and the like." In tables a hollow metal socket carrying two tapering female dovetails is fitted into each leg; the socket, "firmly packed and bedded therein," is further secured by a screw which passes through its bottom into the wood. Tapering metal tongues, fixed to one end of angle-iron bearings, are dropped into the dovetails. The bearings are screwed to mahogany side or end rails and to oak or other hard wood pieces, "along which the top leaves of the table slide;" grooved battens are screwed to the under side of the leaves. A wooden or metal plate covers each socket and leg top; there is "a match plate" on the end of each oak piece; the ends of the rails are joined to the legs by a mortise and tenon joint; and flat flanged plates screwed to the legs and rails strengthen the joint. The socket can be made to carry three, four, or more dovetails; such a socket is peculiarly applicable where girders, joists, &c. are to be supported on different sides of a column or pillar. The pillar is made in two parts, and a double-ended screw passing through the socket binds the whole firmly together. The bottom of the upper part of the pillar is polygonal, "so as to be turned by a suitable strainer."

[Printed, 1s. 4d. Drawings.]

A.D. 1865, March 7.—N^o 640.

WIMSHURST, HENRY WILLIAM. — "Improvements in the construction of joints for boxes, drawers, and other like articles, and for planks and timbers, and in machinery to be

"used in the preparation of such joints." This invention aims "at obtaining the largest available contact surface for the parts to be brought into contact;" and this is effected "by making parallel slots or cuts equidistant from each other across the edges of the pieces of wood that are to form the joints." The tongues of one piece will fit into the slots of the other, "and a little glue being run in a very firm and secure joint will be made." The machine for cutting the slots and tongues consists of a horizontal spindle fitted with a series of saws suitably spaced out; the spindle is mounted in standards carried by the main framing; it is turned "by a strap from a pulley on the main driving shaft." The wood is laid in a pile upon a table affixed to a vertical sliding frame; the frame is supported by a chain "pendent from a pulley," which is keyed to a cross shaft; this shaft also carries a "pair of chain pulleys," the chains being attached to counterweights. The wood is "firmly secured by means of a press follower" worked by a press screw. A vertical motion is given to the table by a hand wheel keyed to the cross shaft. To sharpen the saws a rotary emery wheel of the kind made under "Parnacott's patent" is set in "an adjustable bearing in a sliding frame;" the wheel "by means of suitable gear" is carried across the line of saws; the gear is fully described. While the saws are being sharpened the spindle is locked by a wheel (having the same number of teeth as the saws) placed on one end; below the wheel is a stop which takes into the teeth. To make an angle joint, known in the trade as a "secret dovetail," the wood is secured by a screw clamp to a sliding table mounted on the fixed bed of a "slotting machine." On the frame are standards carrying a crank shaft; pendent from this is a rod jointed to a sliding frame, which is fitted with a series of chisels spaced out at equal distances. On the fixed bed is mounted a chisel holder, whose chisels are spaced out as those in the frame. Motion is imparted to the shaft through a belt pulley, and to the wood by a traversing screw. To join boards "in a line with their length" the teeth of the saws are tapered off so that "wedge-shaped tongues and slots of corresponding form are obtained."

[Printed, 2s. Drawings.]

A.D. 1865, March 13.—N^o 699.

ATKINS, JAMES. — "Improvements in the manufacture of metallic bedsteads, which improvements are also applicable to

"the manufacture of other metallic articles." The ornamental centre or other pieces used in manufacturing the foot rails of bedsteads are made hollow and in one piece, or in more than one brazed, riveted, or otherwise joined. The ends of the rods are inserted therein in holes made for their reception; inside the piece is put "a thin coating of pumice stone or other earthy substance," and outside a cold iron mould or a bed of wet clay; melted cast iron is poured in, filling the ornament and securing the rods. If the foot rail consists only of a top and bottom tube and cross rods, the latter are fixed one at a time; the tubes are divided "into a series of compartments by means of washers;" a "sliding casting box" is used, and the melted metal fills the compartments. Corner blocks consist of hollow casings or shells, and are filled with cast iron, being protected during the running in of the metal, as before described. Hollow ornaments, tubes, balance weights, busts, figures, and the like are suspended during the filling in troughs full of water; the top of the troughs is provided with a plate having in it a number of taper slots for the reception of the upper part of the articles, and weights are attached to the lower end to steady them. The pin at the top of the balance weight is introduced "immediately it has been filled with the melted cast iron."

[Printed, 1s. 6d. Drawings.]

A.D. 1865, March 24.—N° 829.

BEVAN, CHARLES.—(*Provisional protection only.*)—"Improve-
ments in cabin furniture for ships and other vessels," whereby
tables and seats "are capable at all times of being brought to a
horizontal position, though the ship may be sailing on its
side." The horizontal part of T beams is placed beneath the
cabin floor; the upright stem "is provided with horizontal centre
pins working in gudgeons upon the framing on the top of the
two standards which support the table." Beneath the table
top "is attached firmly a suitable iron or wood frame," to which
the upright stems are fixed. The seats to be used along the sides
of the table have a framing as follows:—To the ends of the
horizontal portion of the T beams metal quadrant plates are fixed
with screws and nuts; their upper part is slotted for pins to work
in; the pins are fixed to frames "which are attached above the
floor." On the outer edge of the quadrants are formed "seg-

"mented ratchets," their pawls being on the same frames as the pins. Beneath the seats is fixed a framing similar to that beneath the table top. The pawls are removed from their ratchets by chains or cords working over pulleys on each side of the table. The cords are fixed to a part of the frame which is above the floor, and which "moves backwards and forwards on hinges" beneath the seat." Oscillating seats for the ends of the table are constructed thus:—Horizontal centre pins are riveted to a metal plate, which is screwed to the under side of the seat frame. The pins move within pierced metal plates "attached to a separate frame beneath and within the seat frame." At the sides of the seat frame is a metal quadrant, which moves with it and is provided on one of its edges with a ratchet. The pawl is attached to "a part of the inner frame" and is moved by a hand cord.

[Printed, 4d. No Drawings.]

A.D. 1865, March 30.—N^o 894.

NORDENFELT, THORSTEN WILHELM. — (*A communication from Sigge Flack.*)—"A portable covered hammock." The hammock is hung between two supports by means of two cords at each end, the cords being held apart by a stick. A rope at each end, joined to the two cords, is fixed to the ground by a tent peg and tightened by a tent rope stretcher. A cord is hooked "above" and along the hammock "between the supports; it is tightened by a tent rope stretcher, for which purpose it runs at one end through a pulley or slip; over this cord is thrown a waterproof cover, "which reaches down on all sides a little below the hammock." The occupant can "close the cover over himself by means of straps and buttons on the inside of the cover and hammock;" this cover can be used as a cloak. When one hammock is hung between moveable supports, two are required at each end; but if three "are pitched in a combination of a triangular form, one upright only may be used at each corner."

[Printed, 8d. Drawing.]

A.D. 1865, April 6.—N^o 977.

WILLIAMS, CHARLES HORTON. — "Improvements in the manufacture of cornice pole and other rings." A strip of metal

of the required width receives "by a drawing process of the ordinary kind" the form of a shallow open tube, the edges being parallel or nearly so. The tube is bent and cut "into ring-like pieces;" the ends are brazed together, and then by means of a lathe or otherwise the edges are bent or turned inwards and round. The edges may be bent and rounded by the drawing process; and sometimes they are bent back upon the outer or convex side of the tube.

[Printed, 8d. Drawing.]

A.D. 1865, April 15.—No 1069.

HARDING, THOMAS EDWARD.—(*Provisional protection only.*)—"A new or improved table and support for invalids." The base of the support is a rectangular wooden frame to which is hinged the supporting frame; behind and at the upper part of the latter are jointed two pawls taking into notches cut in the base. This frame is filled in with any fabric or with plaited cane, but by preference with sacking and eyelet holes for lacing. Cross bands with buckles to support pillows or cushions, and arm rests "having hinges shutting upwards," are added. The table is an oblong box on four short legs, the lower part being arched; it has "three separate lids with hinges which when all closed form a flush table surface." The middle lid is provided with two catches for book rests and with a strut and rack behind; "under this portion of the table is a shallow receptacle for a slate." The other two divisions contain whatever may be required by the patient. The legs unscrew and can be replaced by longer ones.

[Printed, 4d. No Drawings.]

A.D. 1865, May 2.—No 1228.

NEWTON, WILLIAM EDWARD.—(*A communication from Frederick Mesbrow Payne and John Spencer Giles.*)—"Improvements in folding beds and bedsteads," whereby they present according to the enclosing case the appearance of a bureau or a wardrobe. The front of the bureau is hinged to the base which serves as a support to the head of the bedstead; it has hinged to its upper corners two short carved legs. The top or part of the top is hinged at the back and carries at each front corner a lug; these keep the legs pressed close against the front. The bedstead is a wooden frame with springs, stuffing, and cover thereon; it is

divided into two parts, and by means of two suitable hinges they can be folded parallel to each other; the hinge and its accessories are fully described. One division is fastened to the inside of the front of the bureau; it may have a head board attached to it; the other has hinged across it a standard capable of folding against it when shut up and supporting it when let down. In a wardrobe bedstead, one division of the bedstead is hinged to the interior of the base; the lower part of the case is hinged lower down still, so that it may drop down out of the way; to this division a board is permanently attached having two legs hinged to it. The board is so placed that it extends beyond the division when the bedstead is let down. The upper part of the wardrobe is furnished with doors, shelves, &c.

[Printed, 10d. Drawing.]

A.D. 1865, May 3.—N° 1232.

LAVANCHY, JEAN BAPTISTE.—“A new or improved chair “ladder.” The front legs are double, two “supplementary legs” covering the ordinary ones; the former are hinged to the latter so that they can be lifted up; both pairs are provided with cross steps. The top of the chair back is hinged and can be kept flat or lifted up as required. The hind legs also can be made double, if it is wished to increase the length of the ladder. In another arrangement, “the two uprights of the back are double;” the fore parts are hinged to the top and lower rails. The top rail is hinged to the uprights; the lower rail moves forward with the fore parts and is supported by two metal bars, which, when the ladder is folded, join “the internal sides of the uprights.”

[Printed, 6d. Drawing.]

A.D. 1865, May 18.—N° 1379.

COPUS, CYRUS.—“Improvements in the construction of bedsteads,” giving to metal frames “the sightliness of the present “Arabian and French wooden bedsteads.” A rectangular iron frame with dovetail joints and metal laths is supported at the head by metal pillars which carry an iron canopy frame, and at the foot by a footboard. The attachment of the bed frame and footboard is effected by screws which pass through the former into tapped socket plates fixed in the latter; metal brackets may

be added below the frame to strengthen the attachment. A wooden ornamental cornice is hooked on to the canopy frame. In French bedsteads a head board is substituted for the pillars and canopy.

[Printed, 102. Drawing.]

A.D. 1865, May 27.—N° 1462.

DIELE, LUDWIG.—“Improvements in mechanism for locking “or fastening tiers or sets of drawers arranged in writing tables, “cabinets, chests, or other articles of furniture.” The patentee professes that his invention is an improvement on the one for which letters patent were granted to Jacob Safran, dated April 15th, 1857, No. 1070; that is to say, he renders “the action of the “locking apparatus or mechanism altogether independent of the “movement of the central or other drawer forming part of the “combination.” He prefers to arrange the mechanism for releasing or depressing the vertical bolts “in combination with “the central drawer,” but does not confine himself to such an arrangement. “Within the interior of the front of the drawer” are two levers mounted on pins, “placed near the centre of each “lever;” the inner ends are preferably “formed with inclines, “which fit together, so that when the end of the one which overlaps is depressed, it will act on the incline formed on the end “of the other lever and depress it.” The outer ends pass underneath the ends of side levers, which move on pins “fixed on the “inner sides of the central drawer;” the front ends of the side levers are “constantly pressed downwards by springs,” and the back ends project over a pin fixed in the side of each of the vertical bolts. The lock of the central drawer has the keyhole enlarged at the lower end, and an additional pin fixed in it opposite to the enlargement; and, when it is desired to release the tiers or sets of drawers, “the key of the lock is reversed, the pipe “of the key being placed upon the bottom pin and passed into “the lock; then by turning it partially round the body of the “key will depress the inner ends of the front levers, which will “act to press down the vertical bolts.” For the construction and arrangement of the vertical bolts, the reader is referred to the abridgment of J. Safran’s Specification. The lock may be so arranged, that by the act of unlocking it “the opposite end of

" the bolt descends below the lock, and thus depresses the ends of the levers," or acts on a lever which depresses the levers.

[Printed, 10d. Drawing.]

A.D. 1865, June 1.—N° 1508.

BRINSMEAD, THOMAS.—" An improved exercising chair for infants." A base is fixed on cross bearers, the front one being supported on feet, the hinder one on rollers or wheels. At one end of the base is a spring board, set at an acute angle and secured by a block or by hinges; in the latter case a spring is inserted between the base and board. At the free end of the spring board is placed or formed a chair or seat, and rising up from the base in front of the seat is a board for the feet to press against.

[Printed, 6d. Drawing.]

A.D. 1865, June 8.—N° 1564.

HUNT, HENRY, and HUNTER, RICHARD.—" Improvements in the manufacture of frames for looking glasses," that is to say, in " swing dressing glasses." The glass is enclosed in " a bed frame of deal or other wood," the back, sides, and front of which are covered with silk, or silk and satin alternately, in flutes or rays. An " upper or covering frame is made to correspond with the sides, top, and bottom of the bed frame." Or the dressing glass may be made in the usual way, and the panel or backboard be covered as above; a slight frame of the same kind of wood acts as a bead. The back " is to be made moveable " by inserting spring catches or other contrivances into the bed frame.

[Printed, 4d. No Drawings.]

A.D. 1865, June 20.—N° 1652.

GEDGE, WILLIAM EDWARD.—(*A communication from Henry Marie Hingand de Saint Maur.*)—" An improved elastic mattress or spring bed." Longitudinal laths are fastened to double webbing or sail cloth. In the webbing between each lath is a metal eyelet, into which the hook of a spring takes. A galvanized iron rod passes through the webbing, " serving to arrest the spring hooks." The ends of the springs are coiled round a wooden rod, which is secured to a wooden cross piece by screwed ring

bolts. In the under part of the cross piece are bolts which unite it to the frame of the bedstead ; it also carries nuts for the admission of bolts which pass through the frame. There is the same arrangement at each end. This mattress is especially applicable to camp bedsteads. There may be added two side rails on which the two exterior laths may rest, two cross pieces to secure the side rails, and legs folding under the cross pieces.

[Printed, 10d. Drawing.]

A.D. 1865, June 24.—N° 1689.

EASTMAN, ROBERT.—“ Improvements in castors.” A ball “ of a true spherical form ” is made to revolve loosely in an inverted cup or frame ; inside the frame at the top, a convex, or concave, or flat segment of steel “ hardened and burnished,” or of other suitable material, is fixed, so that the ball revolves in contact with it, “ by which the least possible amount of friction takes place, “ the bearing or point of contact being immediately over the “ centre.” On the top of the frame is either a socket, or a plate, “ or a screw cast in the frame ;” in the lower portion a thread is cut, into which is screwed a ring or bead (with or without projections inside) “ for keeping the ball in its place, and acting as leverage “ in connection with the segment.” The frames can be made “ of all dimensions and designs ;” the rings may be of the same material as the frames, but by preference, they are of steel or iron hardened ; and the balls are of glass, porcelain, metal, wood, or any other suitable material. The place for the ring is “ at or “ under the horizontal diameter of the ball.”

[Printed, 8d. Drawing.]

A.D. 1865, June 24.—N° 1691.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Charles Joseph Everick.*)—“ An improved portable table or seat.” The top is composed of strips of wood or other material held together by leather or cloth, so that it can be rolled up. Three stretchers and three legs are employed ; one stretcher “ extends “ across at right angles to the line of the joints between the “ strips ;” the other two are carried at an angle from two ends of the top to one end of the first stretcher to which they are jointed, so as to be “ free to move to a certain limit.” The free ends of the stretchers are fixed by spring bolts to tenons on the under

side of the top. The legs form a tripod, being joined by pins or otherwise; one is jointed to the first stretcher; the tops of the other two are received into slots in the other stretchers and secured by spring bolts. When the foregoing constitutes a seat, a folding back may be added to it; when it forms a table, a cloth may be attached to one side of the top; this is spread over "for playing cards."

[Printed, 8d. Drawing.]

A.D. 1865, July 7.—N° 1800.

HENLEY, THOMAS FREDERICK.—(*A communication from Emile Rousseau.*)—"An improved material for stuffing seats, cushions, "mattresses, and other articles." The stuffing consists of shreds of vulcanized india-rubber, or threads thereof, "in a spiral or vermicular form." The shreds are produced by means of "a pair of rollers of different diameters driven at the same speed," or a pair of the same diameter driven at different speed; the threads, "by causing a block of rubber to rotate against a fixed blade," or by means of a moveable blade made to act upon a fixed block of rubber.

[Printed, 4d. No Drawings.]

A.D. 1865, July 14.—N° 1847.

MEDDOWCROFT, WILLIAM.—(*Provisional protection only.*)—"Improvements in the construction of rollers for window blinds, "and in apparatus connected therewith." The roller is made either in two longitudinal sections, or with a slot extending nearly the whole length; the blind is passed between the one or through the other. The sections are united by rings, sockets, or the terminal wheels. On one end of the roller is a fixed wheel; below or near it is a small wheel revolving on a pin which projects from the roller bracket. Round the two wheels is passed an endless band, "so adjusted that the tension thereof will admit of "the revolution of the roller." The wheels may be toothed and gear into each other. At the other end is the "cord wheel." The cord "is fixed to the surface of the roller and then passed several "times round the cord wheel;" it passes in its descent through the eye of a pin affixed to the bracket. The eye is of elastic material or of metal, so that it will exert pressure upon the cord.

[Printed, 4d. No Drawings.]

A.D. 1865, July 17.—N° 1863.

DUMMERE, STEPHEN.—(*Provisional protection only.*)—"An improved mattress and palliasse for the use of the nursery, "invalids, or hospitals." A recess made of japanned tin or other suitable material is let into the palliasse; immediately above a portion of the mattress is covered with a waterproof substance, in the surface of which are a number of metal or other eyelets.

[Printed, 4d. No Drawings.]

A.D. 1865, July 22.—N° 1912.

WILSON, GEORGE, and GOODFELLOW, JAMES.—(*Provisional protection only.*)—"Improvements in bedsteads, sofas, "and chairs," whereby "they are rendered elastic in a simple "and inexpensive manner." A spring is placed either inside or outside each leg, and a foot below each spring.

[Printed, 4d. No Drawings.]

A.D. 1865, July 25.—N° 1925.

PÊTRE, LOUIS, and TUCKER, EDWARD SAMUEL.—"Improvements in ornamental tables and table stands, such as cruet "frames, liqueur frames, flower, egg, and other stands." This invention consists in the use of silvered glass in certain parts of these articles. Tables are made with a top of silvered glass, set on a metal base, from which a + stem rises, hidden by silvered glass surfaces except at the edges. In cruet and other frames the sole plate is of silvered glass placed "on a metal or other "sole plate or support with suitable protection for the silvering "on the under side of the glass." A hole is pierced through the centre for the insertion of the stem or hand hold. In flower stands the sole plate is either one piece of glass from the centre of which rises a + metal stem, or four pieces set in such a stem. "The surfaces of the stem" are covered with silvered glass; on its top is a metal disc also covered with silvered glass. The raised parts on the top are surfaces of glass "fixed apart in manner "somewhat similar to the cross stem," but so as to receive receptacles for water and to hold the stems of flowers. In all cases the edge of the glass is bevilled and surrounded by a silver or plated rim.

[Printed, 10d. Drawing.]

A.D. 1865, August 5.—N° 2036.

GEERING, HENRY.—(*A communication from Thomas Tunnington.*)

“Improvements in the sackings of metallic and other bedsteads, sofas, couches, and other like articles, which said improvements may also be applied to the seats of chairs, railway carriages, and other articles.” Near each end of each longitudinal and cross lath a groove is cut for the reception of a metallic clip, which is made much broader at bottom than at top, and with “the inner or upper surface of the lower part” inclined. The free ends of a doubled flat elastic band are wedged between the clip and the lath, while the looped end carries a hook which is hung to a bar running along the end or side rail of a bedstead or other article. Or circular or nearly circular bands may be used; these are connected to the lath ends by metallic loops screwed to the under side of the laths. The bars to which the hooks are hung are riveted to the rails, or their lower parts “may be made of a hook shape and be slipped or hooked on the rails.”

[Printed, 8d. Drawing.]

A.D. 1865, August 26.—N° 2200.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from James Gourley English and Edwin Francis Mersick.*)—“Improve-

ments in folding chairs.” The chair is supported on cross legs pin-jointed. The seat is either stiff or flexible; if stiff, it is hinged to a rail which connects the tops of the hind legs and rests on a rail connecting the tops of the front legs; if flexible, the material is attached to the two rails. The front rail “is extended sideways through and beyond the legs,” and forms the joints upon which the lower ends of the arms are pivoted. The back consists of two standards and two cross rails; the standards are pivoted to the front legs and to the tops of the arms. “For the purpose of holding the seat within the folding frame of the chair, there is a strap fastened to the front and rear of the under side of the seat and passing over the rails.” Projections at the back of the seat brace the chair when open; and an incline raises the seat when the chair is being folded.

[Printed, 8d. Drawing.]

A.D. 1865, September 29.—N° 2504.

DAVIES, GEORGE.—(*A communication from William Henry Van Nortwick.*)—“An improved reclining chair,” more especially in-

tended "as a sleeping chair for railway carriages." The front and hind legs are united by side and cross rails. The seat is hinged near its front edge to the front legs, so that "it can be made to assume a horizontal or an inclined position." The back is a light frame hinged at bottom to plates which are secured one to each of the hind legs or side rails, or to both. The rear end of each arm is hinged to a side of the back; the front end is pin-jointed to a bent lever which is pin-jointed to a side of the seat. A rod is jointed at one extremity to each bent lever (about midway between the bend and the pin) and at the other to a side rail. To the inside of the front rail of the seat is fixed a bracket carrying a pin on which a lever is hung; to the short arm, but on opposite sides of its fulcrum, two rods are jointed whose ends pass through, and are guided by, openings in the sides of the seat; the projecting ends serve as stops for retaining the bent levers in position. The ends of the rods and the edges of the bent levers are bevelled, and a spring tends to keep the ends of the rods projected outwards. There is a modification described of the arrangement of the arms; there is also a description of a sliding and folding leg and foot rest which may be added to the chair.

[Printed, 8d. Drawing.]

A.D. 1865, September 30.—N^o 2511.

TOWNSHEND, JOSEPH EDWIN.—"A new or improved ventilating spring mattress." The frame containing the springs has a solid bottom of wood or other material; this bottom is perforated with a number of holes of any shape. Each hole is fitted with a valve, or one valve may be made to cover several holes. Any pressure on the surface of the mattress will close the valves and cause the air within the box "to be forced through the material composing the mattress."

[Printed, 8d. Drawing.]

A.D. 1865, October 14.—N^o 2656.

HANCOCK, JAMES LAMB.—"Improvements in bedsteads, seats, couches, and other articles for sitting and reclining on." Each lath has riveted to it strips of steel whose ends are brought under the body of the lath, so that the whole forms a somewhat elliptical spring. "The bent strips on one lath break joint with

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"those on the next adjacent laths, that is, the bent strip on one lath comes in a line with the space between the bent strips on the next." Stops prevent the ellipses from being flattened beyond a fixed extent. Sometimes the ellipses are covered by a lath extending over them from end to end; this lath may be connected to a spring at one or both ends. Sometimes a connecting strip is carried from one ellipse to the next. Cross laths are used or not as may be required. The strips of steel should be "curved in cross section" to increase their strength and "to prevent a cutting edge being exposed by them." Other bedsteads and seats are made with laths supported at each end upon a spring, or curved with the ends undermost. Sometimes coiled springs are placed between two laths; a pin riveted to the upper lath passes through the spring and lower lath, thereby preventing the spring from bending laterally. The ellipses at one end are placed in a frame which is jointed to the bedstead or couch and is capable of being raised by the aid of a rack hinged to the frame. Metal laths are made "curved in cross section," and with their ends flattened so as to be held by the ordinary fastenings; sometimes the ends are not flattened and secured "to a curved bolster or saddle." Sometimes a raised edge is applied on or to a bedstead frame to protect the bedding from the ends of the laths and from the fastenings.

[Printed, 8d. Drawing.]

A.D. 1865, October 17.—N^o 2678.

DAVIES, GEORGE.—(*A communication from Auguste Emanuel Eliaers.*)—"Improvements in folding chairs." Two limbs on each side are cross-jointed, the longer ones forming the back and front legs, the shorter the hind legs and supports for the arms. The front and hind legs are each connected by a cross rail. The arms are flexible and joined to the supports and back. The hind portion of the seat is jointed at the same place and by the same joints as the limbs; the front portion is supported on rests which bear against the front legs. Another arrangement "allows of alteration in the height of the seat and gives more or less inclination to the back." The limbs forming the hind legs are much shorter and jointed at their tops to the longer; "their spread is maintained" by two arms pivoted to the front legs. These arms are joined "at their posterior extremity" by a removeable cross rail furnished with the following mechanism:—

Two bolts are worked by means of a lever and disc; in the disc are two notches "in which are held pins fixed near the inner ends of the bolts;" coiled springs give the bolts a constant tendency to project from the ends of the cross rail. In each hind leg is a row of holes in which the bolts can enter. The disc may be replaced by a pinion gearing with toothed extremities of the bolts. The seat is supported in front by props which hook on to pins "on the prolongation of the arms." In another arrangement the props are jointed in the middle and fixed at their lower end to the prolonged arms; flexible arms may be added by lengthening the shorter limbs. In the last two arrangements the material which unites the back limbs is attached at bottom to the side supports of the seat.

[Printed, 10d. Drawing.]

A.D. 1865, October 19.—N° 2696.

EVERARD, JOSEPH.—"Improvements in rollers for roller blinds, and in roller blind furniture, and in fixing roller blinds at any required height." The roller is an open-jointed tube; the blind is fastened to a rod placed inside the roller. The cord pulley and "the single end" have each a tubular piece fixed to them and in each a longitudinal slot corresponding with the open joint; the tubes are placed in the roller and secured by binding screws. At the pulley end the screw enters a slot either longitudinal or T-shaped, or "similar to that of a bayonet joint fastening;" at the other end the screw enters a longitudinal slot which does not extend to the extremity of the roller. By this arrangement the roller can be fitted to any window. An arm fixed to the side of the window frame has an opening through which the cord passes; the wide part of the opening is nearly circular, the other part wedge-shaped; the latter part confines the cord when the blind is at the height required. The patentee describes his method of making his blind furniture.

[Printed, 8d. Drawing.]

A.D. 1865, October 19.—N° 2699.

BALLARD, JOHN.—"Improvements in window blinds and screens." In window blinds the sides and bottom of the outer frame are of metal drawn or bent into an open-jointed tubular form; a strip of wood may be inserted to strengthen them. The

frame on which the blind is stretched is made by soldering or otherwise uniting four strips of sheet metal. When the stretcher frame is inserted, a moveable top is added and held in its place by spring or other fastenings; the top may have a socket at each end to slip on to a side. A cap may be mounted on each side on a tongue (which may be a continuation of the wooden strip), and a screw may be passed through the cap and tongue into the window frame. If the blind is to be frequently changed, the sides of the stretcher are pin-jointed, one to the top, the other to the bottom, so as to allow of their being lengthened into a line; when the hem of the blind has been passed over the top and bottom, the sides are turned down at right angles and secured by a slot and screw. Or top and bottom rods of round wire may fit at their extremities into tubular sockets on the bent ends of the side rods. The frames of screens can be made in either of the above ways, or the top and bottom of the outer frame may open in the middle and be secured by projections and pins. At top and bottom is attached a projection carrying a cork which enters an open-jointed tubular standard mounted on a stand.

[Printed, 10d. Drawing.]

A.D. 1865, October 21.—N° 2723.

GEDGE, WILLIAM EDWARD.—(*A communication from Louis Parrabère.*)—(*Provisional protection refused.*)—"An improved process for bending or arching wood," to obviate the necessity of using "jointed pieces" in chairs, &c. "The squared wood is placed in an apparatus which receives a large quantity of steam;" when sufficiently impregnated it is removed, placed on a frame of the shape required, "forced to rest on its outlines" by nippers &c., and kept there until it is cold.

[Printed, 8d. Drawing.]

A.D. 1865, October 21.—N° 2732.

MATTHEWS, SAMUEL PARKES.—"An improved method of hanging or suspending blinds from blind rollers, and improvements in the manufacture of such rollers." A longitudinal groove is made in the roller; a cane or wire, "picking up the loops or rings which are attached to the top of the blind as it passes along," is slid into the groove and secured by rings &c.

bands. The roller can be lengthened by furnishing one or both ends with a gibbet or socket slide, which may be projected by "an extending screw" or equivalent means. No rack pulley is required, but "inside the slide which is attached to one end of the roller" is a coiled spring. This presses the slide outwards, and a blind end, having several points or projections upon the outer parts thereof, being fitted to this slide, the said points or projections take into corresponding grooves or recesses in the plate from which that end of the roller is suspended."

[Printed, 4d. No Drawings.]

A.D. 1865, October 27.—N° 2770.

SANSON, ROBERT BELL.—"Improvements in roller skates and in the rollers to be used therewith, and for other purposes," namely, for "chairs, tables, couches, and in fact for all furniture." The improvements consist in making the spools or centres of the rollers "of vulcanite or ebonite, or other similar substances, separately or in combination;" and the spools "may be employed in combination with vulcanized india-rubber or other substances on the exterior." These rollers are used in pairs "fitted on the same axis," and, when applied to skates, a pair is fixed by preference "about the centre of the skate" and mounted "on a central swivel moving in a vertical direction." Or "a roller or rollers, mounted on an eccentric or on the ordinary castor principle, may be used." To turn the roller or rollers back to their central position "after any evolution in skating," one end of a "stiff double V or other shaped spring" is fixed on the under side of the skate. "The free ends are then made to grasp or press against, on either side, a tongue or projection formed and projecting from the axle of the double roller or rollers," so that, when the rollers have been turned to the right or left, the spring causes them to resume their position. The rollers are prevented from turning too far round by "a stop block, against which the roller frame comes in contact and thus prevents the said rollers exceeding a certain useful angle."

[Printed, 4d. No Drawings.]

A.D. 1865, November 11.—N° 2901.

SLATER, DANIEL.—"Improvements in cabinet furniture." In the first part is described "a revolving casing and shelves adapted

"to the pedestals of wardrobes, sideboards, or sewing machine cabinets." The top, bottom, sides, and back are framed together in the ordinary way; a circular casing with partitions and shelves revolves inside on pivots (at top and bottom) which "are on a line with the front edges of the framing of the pedestal." A little more than one half of the circumference is a plain surface, veneered, or ornamented, or having a mirror embedded therein, which when closed up forms the front of the article. Or the inner casing may be stationary, and the outer frame, divided at the middle of the back, made to pass, one half to the right, the other to the left, "either half radiating on pivots or provided with knee pieces at the rectangular parts of the outer casing, which knee pieces will slide in a circular groove (or on friction rollers) cut in the base or top of such casings." The patentee next details very fully (dividing his subject into no less than ten chapters) his many methods of applying "retiring sliding doors" to various articles of furniture. The doors are formed of slats, and are employed sometimes alone, sometimes in combination with flaps and projecting shutters. He also describes his improvements in fastening porcelain knobs or handles to drawers and doors:—"The shank is passed through a hole in the wood, its "dovetailed circular end" projecting at the back, and a wooden collar "made in two halves" is glued round the end. Or the shank is carried through so far as to allow a wedge-shaped cavity to be cut in it; a wedge fills up the cavity and holds the knob by tightening its flange against the front of the drawer.

[Printed, 1s. Drawing.]

A.D. 1865, November 24.—No 3023.

NEWTON, WILLIAM EDWARD.—(*A communication from Frederick Chesbrow Payne and John Spencer Giles.*)—"Improvements "in helical or spiral springs for upholstery and other purposes, "and in machinery for manufacturing the same." The novelty of the springs consists in their "having a twist in a direction the "reverse of the spiral or helical coil." The machinery is composed of "a flyer" and "a rotating mould or form." The flyer rotates in a suitable frame and contains a reel on which the wire is wound. At one end of the flyer is "a hollow journal," through which the wire passes from the reel to the mould. The flyer and the mould "may be driven at such relative velocities that the flyer

" makes three revolutions for one of the mould." The wire is twisted by the rotation of the flyer.

[Printed, 8d. Drawing.]

A.D. 1865, November 29.—N° 3057.

LAURIE, THOMAS.—" An improved piece of furniture convertible into a seat with back on either side, or seat with desk on either side, or a seat with table on either side." A wooden seat is supported at both ends by metal standards. Two bars are connected to the standards, one on each side, by bolts, so as to permit the free motion of the bars from side to side of the seat; two metal plates, fixed to the top of the standards, keep the bars in position; the bars work within them. The upper ends of the bars are secured by screws and nuts to the top ends of a piece of wood which reclines on the edge of the seat and forms a back to it. The back swinging on the bars can be transferred with them from one side of the seat to the other, and can be supported by the aid of pins, which pass through holes in the upper ends of the bars, so as to serve as a table or as a desk.

[Printed, 8d. Drawings.]

A.D. 1865, December 2.—N° 3093.

WESTON, THOMAS ALDRIDGE.—" Improvements in apparatus for raising, lowering, and moving heavy bodies, and for transmitting and arresting motion for various purposes." This invention is an improvement on the one for which Letters Patent were granted to Mr. W., bearing date January 29, 1863, No. 263, and he applies it " as a looking-glass bearing " as well as to the purposes mentioned in the title. The apparatus is composed of a drum, a brake cylinder, a shaft, two series of discs, and a boss or nut for regulating pressure. The drum revolves on the shaft; the cylinder (either part of the drum or attached to it) has its interior ribbed; the discs are mounted on the shaft alternately; one series called shaft discs have square apertures in the middle; the other series called cylinder discs have circular apertures, and are provided with grooves corresponding to the ribs of the cylinder. When this " patent brake and coupling " is applied as a looking glass bearing, the pressure nut is screwed to the outer end of the shaft, and the cylinder and discs are contained in the drum; the drum portion is fixed to the pillar, and a clip, connected to

the frame by means of dovetails and a screw, carries the inner end of the shaft. Sometimes the attachment to the pillar is by means of a piece "which slides into a recess of corresponding figure made in the said pillar," the recess "being readily made by a boring bit for the circular part of the piece, and for the other part by cutting with a chisel." Sometimes the shaft discs "are made to fit by their outer edges the interior of the barrel;" in this case the barrel is grooved instead of ribbed, and the cylinder discs "instead of being grooved at their edges have a projecting tongue to enter the groove in the barrel." The frictional action is obtained "by the pressure of the screw nut, and where both series of discs are of metal, elasticity to give smoothness of motion may be obtained by placing a piece of leather or other slightly elastic material between any two discs of the same kind placed together or by a spring." A forked bearing "has a square opening adapted to the square shaft to keep the same from turning, and it has also a tapered shank passing downwards through a bush or bearing in which it is secured by a nut. The barrel is attached to the frame by a clip. This last mode of construction and attachment is applicable also to a music rest, writing flap of an invalid chair, book rest, &c., as the barrel may thus turn in one direction upon the frictional bearing, and may also revolve in the bush, "giving two motions."

[Printed, 1s. 10d. Drawings.]

A.D. 1865, December 6.—N° 3135.

HAMILTON, HENRY BERKELEY.—(*Provisional protection only.*)—"Improvements in the construction or manufacture of metal bedsteads." The whole of the framing is of galvanized iron, and the laths are made of the best Welsh wire fringed, bordered, or looped at the edges; the ends are fixed by screws or "work by slot and pin;" they are attached to coiled springs which "are secured on two arched flat iron or steel bars."

[Printed, 4d. No Drawings.]

A.D. 1865, December 9.—N° 3186.

MARSHALL, HENRY SNAET.—(*Provisional protection only.*)—"Improvements in furnishing and adapting ordinary tables for playing billiards." No alteration is required in the construction

of the table ; a cloth cover is spread over the top, and cushions are laid thereon. The cushions are made in either four or six pieces and connected at the corners by metal bridge pieces, "to which the wire stretchers of the pockets may be attached." The bridge pieces are arched upwards instead of outwards "to allow the ball to pass freely underneath and while still on the surface of the table, in order that it may run over the edge of the table and into the pocket, which must be extended more than in ordinary on account of the absence of the hollows cut in the corners of billiard tables." The bridge pieces are provided with strong metal prongs of a rectangular form "which are received into sockets in the cushions ; the sockets are usually "some three or four inches long by about a quarter of an inch in breadth ; their weight keeps the cushions in place, but the cushions themselves "may be weighted at bottom by running in lead." Or cramps may be used, the upper limb of each entering a hole in a cushion, "while the lower one, provided with a thumb-screw, passes under the top of the table and pinches the cushion thereto."

For a French table "the cushions will require attaching to each other at the corners only, or they might even be all fixed together like a frame and simply laid on the table top."

[Printed, 4d. No Drawings.]

A.D. 1865, December 20.—N° 3294.

CLAYPOLE, ROBERT MACLEOD. — (*Provisional protection only.*) — "Improvements in the construction of castors." The patentee proposes "to apply to the top of the vertical stem or fork of the castor containing the roller a circular plate or table," in which he cuts "four recesses or slots ;" these "serve to receive four small wheels or rollers set on axes or shafts passing through the recesses. The peripheries of these small wheels are about the level of the table surface, so as to press upwards against the lower surface of a flanged disc fixed within the conical hollow foot of the castor by means of screws."

[Printed, 4d. No Drawings.]

A.D. 1865, December 29.—N° 3364.

VOGL, DAVID. — (*Provisional protection only.*) — "Improvements in the construction of show cases, picture frames, house and

"shop furniture and fittings, and other similar articles." The articles are so constructed as to be "extensible and contractible;" they are formed of "a number of separate component parts capable of being readily put together or disengaged." The parts consist of "corner pieces, either angular or curved, and of pieces with one, two, three, or more branches or arms, and likewise of straight, curved, or otherwise shaped longitudinal or insertion pieces, which are fitted to the corner pieces, or to the branched pieces or to both," so that a framework of greater or less extent may be obtained. The parts are united by hooks, clamps, or other fastenings; they are by preference made of iron, but other materials may be employed; they may be solid, tubular, or semi-tubular. When the frames are intended for the reception of shelves or internal partitions, "racks or stepwise supports or linings may be fitted for the purpose to the framework."

[Printed, 4d. No Drawings.]

1866.

A.D. 1866, January 13.—N° 120.

SMITH, HENRY FRANCIS.—"Certain improvements in the manufacture of beds or mattresses to be employed on shipboard, or in similar articles to be used as supports in water." This bed or float consists of a water-tight bag stuffed with "vegetable matter of a cellular construction," such as straw, bulrushes, or the like. The bag may be made of any waterproof fabric.

[Printed, 4d. No Drawings.]

A.D. 1866, January 16.—N° 145.

DUMMERE, STEPHEN.—(*Provisional protection only.*)—"Improvements in mattresses and palliasses and seating, for use in nurseries and hospitals and by invalids, and for omnibus or any other seating exposed to wet by weather or otherwise." Provisional protection was granted for this invention, July 17th, 1865, N° 1863, to the description of which the reader is referred. In the present case the patentee adds that his invention may be used in any places exposed to wet "and having no level or absorbent surface always to be self-draining."

[Printed, 4d. No Drawings.]

A.D. 1866, January 17.—N° 157.

ALLEN, THOMAS.—“An improvement in the manufacture of “iron and other metallic bedsteads by the application of wooden “laths instead of sacking or iron lath bottoms.” The laths are placed longitudinally. “A projecting piece of material is secured “underneath by screw pins or otherwise, and fixed to tubes or “any other shaped iron or other metal” for the support of the laths. Where the laths are required to be secured in their position, “a piece of iron is fitted over the top” and “made with “pins passing through or between the said laths, with nuts and “screws underneath or otherwise.”

[Printed, 6d. Drawing.]

A.D. 1866, January 19.—N° 180.

PARSONS, WILLIAM.—(*Provisional protection only.*)—“Improvements in rack pullies for roller blinds for windows.” This invention relates, 1, to pulleys of the ordinary construction, “in “which a spring takes into the teeth of a rack;” 2, “to a “mechanical arrangement designed as a substitute” for a rack pulley. 1. The piece of metal “to which the grooved roller is “attached” is made so that “the back and top part thereof shall “take into the teeth of the rack,” and to the bottom part of the piece is affixed a spring “with its point downwards and pressing “against the teeth of the rack,” its use being “to keep the top “part of the aforesaid roller piece closely pressed into the teeth “of the rack,” and to throw the strain “on the roller piece instead “of upon the spring as heretofore.” By pulling the roller piece outwards “the roller may be slidden upwards without requiring “to be first removed from the rack piece.” 2. Upon “a plain “piece of metal, glass, porcelain, or other material,” is placed a sliding piece, “so formed as to carry by its outer end an ordinary “roller.” On moving this piece downwards, “immediately that “the cord is pulled tight, the effect will be to cause the slide “to bind upon the piece on which it slides at opposite points, “that is to say, by the top edge of one side and the bottom edge “of the opposite side, by which the pulley will be firmly held “without the aid of a rack.”

[Printed, 4d. No Drawings.]

A.D. 1866, January 25.—N° 245.

SOUTTER, JAMES, senior.—"Improvements in centres for supporting swinging mirrors." Into the inside of each standard is fitted a plate "bored out to receive and fit upon" a conical centre pin, the projecting part of which is square and enters a square hole in a plate fixed to the mirror frame. A strong blade or other spring is secured to the inside of the mirror frame plate, and, acting on notches or shoulders formed on the pin or on a nut screwed to the end, draws the pin inwards and produces "sufficient friction to hold the mirror in any position in which it may be set." In a modification, a coiled spring is employed, and the pin has "the middle part made flat on one side only to prevent turning."

[Printed, 8d. Drawing.]

A.D. 1866, January 30.—N° 292.

WETHERED, EDWIN ROBERT.—"Improvements in the construction of stands for bassinets or child's cots, whereby the cots are rendered susceptible of a vibratory or rocking movement." The stand consists of a frame to which legs are fastened by thumbscrews and snugs by rivets. A pin with a conical head fits into a conical countersink in each snug; and to each pin is bound a tubular slat of vulcanized india-rubber, which is attached to the bottom of the cot by a rivet or a strap. The patentee does not limit his invention to the above method of uniting the cot to the stand; hooks and loops or rings and any elastic attachments may be used.

[Printed, 8d. Drawing.]

A.D. 1866, February 8.—N° 380.

SALKELD, SAMUEL JOHN.—(*A communication from John Jay Haley.*)—"Improvements in spring bed bottoms." A frame of wood or other material of a size to fit the bedstead is secured to the ends of the cross rails. Screws or pins fixed in the top and bottom of the frame pass through oblong slots cut near each end of longitudinal slats made of "some elastic or readily yielding wood." Washers or flat rings of india-rubber or other elastic substance are placed on the screws or pins between the frame and the slats to prevent friction. The slots are enlarged at their outer ends for the admission of the screw or pin heads, and the slats

are a trifle longer than the distance between the top and bottom of the frame.

[Printed, 8d. Drawing.]

A.D. 1866, February 9.—N° 410.

CLIFT, THOMAS.—“Improvements in the manufacture of portable chairs.” The chair is made in separate parts, viz. a back with the hind legs let in “by mortices or inwardly rebated joints,” a frame carrying the seat, and front legs. To join the back to the frame, a clamp with a tapering stud terminating in a screw is fixed to the frame, and a mortise and space for the stud and screw are cut in the back; the screw is secured by a nut inserted at the back. Or a metallic mortise is let into the frame and a taper plug into the back; the plug is secured by passing a pin through both, “the head of the pin terminating on a level with the cushion” and being adjusted by hand. A small flat spring underneath “the frame gears in a notch in the lower extremity of the pin.” The front legs are provided each with a male screw which turns in a female screw set in the frame. Or on the top of each leg is a stud having a flat spring “screwed in a recess on its face;” the spring is furnished with a tooth; a metallic mortise for the reception of the stud is let into the frame and has in it a cavity into which the tooth springs; the tooth is released by aid of a pin or slide. The arrangement may be reversed.

[Printed, 8d. Drawing.]

A.D. 1866, March 22.—N° 857.

ARCHDEACON, MONTAGU.—“A new or improved kind of “expanding window blinds, cornice poles, blind rollers, and “other window fittings, also picture rods and stair rods.” The blind is made in two or more parts; the uprights are by preference of wood and the framing of metal, tubular and having “projecting lips” between which the edges of the gauze or other material are secured. The top and bottom rails of the framing “are arranged to slide one in the other.” Window fittings, picture and stair rods, are made on the same sliding principle, stops being formed on them to prevent their being drawn out too far.

[Printed, 10d. Drawing.]

A.D. 1866, March 27.—N° 892.

GEDGE, WILLIAM EDWARD.—(*A communication from Léandre Paul Quéteanu.*)—(*Provisional protection refused.*)—"A combined "arm-chair and travelling bag," which "is intended more particularly to afford to persons travelling by rail in third-class "carriages the comfort enjoyed by first-class passengers." The article is "capable of almost instant transformation into a good "firm arm-chair;" it is composed of two principal parts, the seat and the back, which are united by hinges. Each part is formed of a frame of angle iron, "of from $\frac{1}{4}$ to $\frac{3}{8}$ of an inch flange," and "furnished with small bands of metal or wire gauze, on which "rests the cushion forming the seat." The bag, which consists of a large leather pocket with one or several compartments, is fixed behind the back. "The arms of the chair, fixed to the seat "by their uprights, are furnished at the other end with hooks, "by which they are attached to the back." When the article is folded, the pocket "touches the bottom of the seat."

[Printed, 4d. No Drawings.]

A.D. 1866, April 14.—N° 1060.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Madame Sophie Dambrine.*)—(*Provisional protection only.*)—"Improvements in beds for invalids and other sick and infirm "persons." The bed "is provided with a frame carrying a sheet "on which the person is placed;" the frame is raised or lowered by a rack and winch or other method; the sheet is made in several pieces laced or tacked together, "so that one or more may be re- "moved in order to dress any injured or diseased part without "disturbing the patient;" it is also connected with a funnel or basin communicating with a close stool "placed beneath the "bed, and covered with a sliding flap." The patient can "by "any suitable means" pump water into the basin after using it. The mattresses "are replaced by a number of bolsters or small "circular cushions on rods passing from side to side of the "bed."

[Printed, 4d. No Drawings.]

A.D. 1866, April 25.—N° 1165.

GEDGE, WILLIAM EDWARD.—(*A communication from Jean Antoine Alexandre Dupuy and Pierre Grivaud.*)—"An improved

" construction of spring bed or mattress, and apparatus connected therewith." The case containing the springs is of wood or iron; the bottom consists of five laths, each of the outside ones supporting three springs, each of the others six springs, "all spiral, made of copper, and fixed by means of cramps and fastenings." There are three moveable laths, one hinged by three metal hinges to the head, "separated from the box by a space of about one inch;" one somewhat similarly hinged to the foot at the same distance from it; the third is situated about three inches from the second. In the third lath "in front of the extension of the second plate of the hinges" are three notches or grooves into which the extended parts occasionally enter. The foot lath "is traversed by three strong screws which cross the second space and penetrate into the intermediate lath." The laths form a frame, being connected by two iron rods along which the intermediate one slides, being grooved for that purpose. This frame is covered with flat wire gauze, bound on the rods, fixed to the head and intermediate by cramps, and fastened to the springs. "To the five laths which form the bottom of the box or case correspond five rods tying together the two rods of the framing, and arranged one by one on the middle of the springs in their upper part." There is "a special machine or apparatus for setting up" the mattress and stretching the gauze; it is "composed of two distinct parts;" one part consists of two iron rods; the lower one is armed with pins or teeth intended to hook the meshes of the gauze; it is placed within the mattress; the pins pass through the upper rod, which is pressed against the lower by three wing nuts corresponding to screws thereon. The second part is an oblong frame composed of three fixed and one moveable rod; the fixed rod (one of the longer ones) "fits on to the lower lath of the mattress" by means of two clamps or hooks; the moveable one (parallel to the fixed one) carries two catches which hook on to the first part. A screw set in motion by a crank brings the rods nearer together, and thereby draws the gauze "to the desired point of tension."

[Printed, 10d. Drawing.]

A.D. 1866, April 26.—N° 1169.

BONNEVILLE, HENRI ADRIEN. — (*A communication from Etienne Arnould.*) — (*Provisional protection only.*) — "Improve-

"ments in spring mattresses." The mattress consists of a metal frame "on which is adapted an apron or sheet of metallic cloth or network, kept in a state of tension by any suitable means, and reposing on a number of conical springs;" these are supported by and attached to cross bars of angle iron forming part of the frame.

[Printed, 4d. No Drawings.]

A.D. 1866, April 26—N° 1172.

GARDNER, HENRY.—(*Provisional protection only.*)—"Improvements in hooks or holders whereby to suspend curtains and other articles." This invention "relates to the combination of a clip and a hook, or it may be a ring, or other form." The clip consists of two limbs with loops at the ends, and by preference one passes partially within the other; a runner increases the pressure of the ends. The clip may be made in one piece with a hook or be connected to a ring; in the latter case, a coil is formed "at the double," which coil "may encircle the metal of the ring loosely or be fixed thereto." In the former case "I prefer," says the patentee, "to double the wire or metal of which it is made at the point of the hook, and continue the two parts in close contact throughout the form of the hook; at the termination of the hook I separate the wires from the spring coil, and continue them in the position and form of the gripping limbs."

[Printed, 4d. No Drawings.]

A.D. 1866, April 26.—N° 1178.

COTTAM, GEORGE HALLEN, and COTTAM, HENRY RICHARD.—(*Provisional protection only.*)—"Improvements in the manufacture of iron bedsteads." The first part describes the construction of the legs and the method of applying castors thereto:—A wrought-iron tube to form the outside of the leg is cast into a corner joint; the stem of the castor, having a boss with cheeks cast or fixed on its lower end, passes up through the tube and bears on the under side of the joint. The boss or the stem is made to fit the lower end of the tube, inside which is a guide for the stem. A pin passed through the stem immediately above the guide secures the castor to the leg. Sometimes cheeks are cast "on a long tubular socket suitable to form the outside of the

“ leg,” and into the corner joint is cast a wrought-iron rod, over which the socket is passed and secured by a set screw entering a ring grooved round the rod. The second part relates to the ornamentation of head and foot rails :—The ornaments are made with stems which “ project into the moulds in which the junctions “ are cast, and they become securely held by the running of the “ metal upon them.” To prevent damage to the lacquering from heat, the stems are made long enough to receive a boss of porcelain or other non-conducting material between the ornament and the mould. The third part describes methods of holding more securely together the parts by which the side and end angle irons are connected at the corners, and of preventing the dovetail joints from “ shaking loose :”—Either a screw and nut are combined with the joint, or a bolt is passed through the joint vertically and receives a nut, or a slot is cut in the screw or bolt, and a cotter is slid through it.

[Printed, 4d. No Drawings.]

A.D. 1866, May 16.—N° 1386.

COCHRANE, ALEXANDER.—(*Provisional protection only.*)—“ Improved methods of fastening covers or cushions to chairs “ and other similar seats.” One end of a piece of elastic material is fastened to the under side of the cushion ; the other end is passed through one or more holes in the seat and secured to any convenient part of the chair. Sometimes the elastic is fastened to the chair without passing through the seat ; sometimes it is fastened to a weight or spring under or at the back of the chair. Sometimes a spring roller is employed.

[Printed, 4d. No Drawings.]

A.D. 1866, May 18.—N° 1407.

GESELL, RICHARD, and LEA, ALFRED.—(*A communication from Guiliamimus Pohlmann and John Dalk.*)—(*Provisional protection only.*)—“ An improved method of and apparatus for preparing and fluting picture and other frames and mouldings.” The apparatus is composed of the following parts : 1, a table or bench ; 2, a board to which the frame is fixed ; 3, a tooth rack ; 4, a lever for holding the board ; 5, an adjusting frame ; 6, a cross bar “ with bearing for spindle to work in, and slot hole to

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"fix the fluting iron in;" 7, two small cross bars with slot holes for regulating the frame; 8, two screws "with slides to hold the fluting iron in its place;" 9, a pin wheel with tooth wheel attached; 10, a preparing plate; 11, a moveable plate or plates; 12, a spring; 13, a spindle "with holes to regulate and adjust small tooth wheel;" 14, a tooth wheel attached to spindle. The frame being fixed to the board, and the board being secured to the table by the lever, "the preparation is roughly applied" to the frame; the machine is then passed over the frame "and prepares and flutes the preparation and moulding by means of one or more moveable plates according to the pattern required." The machine is set in motion "by pushing it along the tooth rack," or "by fixing the machine and moving the rack under it." The small tooth wheel "in turning forces the moveable plate or plates" down to the frame, and the plates are forced up again by the spring, "thus producing the pattern required." The machine may be of any size "and of sufficient weight to smooth the preparation."

[Printed, &c. Drawing.]

A.D. 1866, May 21.—N^o 1427.

TOMBS, JAMES. — "Improvements in the manufacture of metallic bedsteads and other articles of like manufacture;" or rather "in casting several corner blocks at one casting process, and at the same time fixing them on the pillars of the bedstead or other article." Pattern corner blocks are supported in a row on a metallic moulding frame, the concave side of each being upwards. A half mould box, "in which sand is rammed in the ordinary manner of making a sand mould," is placed upon the moulding frame. The whole is inverted, the frame is lifted off, and another half mould box is placed upon the pattern blocks. The second half mould being formed, the blocks are taken out metal pattern dovetails and the pillars are put into the lower half mould in their proper positions, the upper half is replaced, and the casting is performed in the usual manner. Or the mould may be made from two moulding frames, "each having fixed it or made in one piece with it one half of the series of pattern corner blocks."

[Printed, &c. Drawing.]

A.D. 1866, June 21.—N° 1661.

BROWNE, BENJAMIN.—(*A communication from Robert Clegg.*)—(*Provisional protection only.*)—"Improvements in the construction of camp or folding bedsteads." The sides are composed of round pieces of wood in three parts joined by metal hinges; the sacking is sewn to the side pieces. Each hinge is made of two pieces of malleable cast iron, into one of which is fastened a piece of flat metal having a slot therein. Through the slot passes a pin fixed across one end of a short metal tube; the other end carries a round piece of wood; these pieces form the legs and act as stretchers to the sacking. The legs cross, "and around each of the crossing parts thereof is fixed a short tube of metal, in one of which and midway of its length is fixed a T-shaped piece of metal, which is intended to take and lock into a corresponding shaped recess formed in the tube which is upon the other leg." The legs at the head are longer than the others, for the purpose of raising the sacking so that it may serve as a pillow.

[Printed, 4d. No Drawings.]

A.D. 1866, July 10.—N° 1806.

MILLWARD, JOHN.—(*A communication from Charles Hess.*)—(*Provisional protection only.*)—"A convertible piano and music stool." The piano, instead of having legs attached to it, "is supported by a frame, which rests upon a hollow base." Inside the base is a couch mounted on rollers; it has a hinged headboard and footboard with frames for a curtain. "A hollow space is formed in the middle of the frame for rendering the pedals accessible;" on one side of the space is a closet "having doors opening in front of the piano;" on the other side a bureau with drawers and a closet fitted with toilet articles; "the bureau and second closet are made to open at the end of the frame." The upper part of the piano, the frame, and the base, can be "readily taken apart from each other." The music stool is constructed to contain a work-box, a looking-glass, a writing-desk or table, and a set of drawers. The seat frame is hollow and arranged as a work-box; the seat is hinged forming a lid; its under surface carries a looking-glass. The stand is a rectangular frame; "the outside surface of the upper part" is hinged at top,

and can be raised for a table or desk ; in the lower part of the frame is a set of drawers.

[Printed, 4d. No Drawings.]

A.D. 1866, July 12.—N° 1836.

NEWTON, ALFRED VINCENT.—(*A communication from Benjamin Johns Harrison and James Condie.*)—"An improved construction of folding chair." The chair stands on two pairs of cross legs ; the hind legs are joined at top and near their lower extremities by cross rails ; the front legs are somewhat larger and are placed on the outer sides of the others ; they are pivoted at top by a cross rail. A flexible seat is secured to the two rails, but "at or near the under or lower edge" of the hind rail and "below the axis or pivots." The back is formed of two arms connected at top by a cross piece ; their lower ends are fixed at right angles in the back rail ; they project through this rail and have fitted on their extremities a cross bar, which, when the chair is opened, comes in contact with the under side of the front legs, and acts "as a brace" to prevent the back "from being tilted too far back."

[Printed, 8d. Drawing.]

A.D. 1866, July 21.—N° 1893.

DAVIS, WILLIAM STAMFORD.—(*Provisional protection only.*)—"An improved roller for window blinds, maps, almanacks, and other similar articles." The roller is divided into two longitudinal sections, each having a rabbet groove throughout its length "on the inner or flat surface and on one edge." The sections are connected at one end by the cord wheel, and at the other by a ring, ferrule, or other contrivance. "The blind, having a hem at the top, is passed through the slit in the roller, and is supported in the ploughed groove by passing a rod, slip, or tongue through the hem."

[Printed, 4d. No Drawings.]

A.D. 1866, July 26.—N° 1944.

HOFFMAN, JOHN WILLIAM, and WILSON, GEORGE ROWE.—(*Provisional protection only.*)—"Improvements in an apparatus for lowering and raising window blinds, curtains, maps, and the like." An endless cord of india-rubber, covered or not, or

interwoven or not with silk, cotton, or other substance, is employed, "either by slinging it over the ordinary window roller and carrying it round a single wheel, or on a similar wheel with a frame having a catch spring fitting to a rack on either side."

[Printed, 4d. No Drawings.]

A.D. 1866, July 31.—N° 1973.

GEDGE, WILLIAM EDWARD.—(*A communication from Pierre Armand Protard.*)—(*Provisional protection only.*)—"An improved fastening, intended to replace the ordinary screws and nuts in bedsteads and articles of furniture generally." The fastening is composed "of a spindle, carrying a square and circular part, the whole moving round an eccentric rod fixed to one of the pieces, which are to be fastened together," and "of a catch or hook, which by means of the spindle, when set in motion by the aid of a key or lever, receives a come-and-go motion, fixing it to or withdrawing it from a bolt or pin fixed on the other part to be joined; the spindle moves in the space left in the hook or catch, so that it is only necessary to exert a pressure on the key or lever to take down or set up the bedstead or other article of furniture."

[Printed, 4d. No Drawings.]

A.D. 1866, August 1.—N° 1979.

BEAUMONT, WALTER, and McMASTER, WILLIAM.—"Improvements in apparatus for holding and releasing cords, chains, ropes, and bands," particularly applicable "to holding and releasing the cords by which Venetian and other blinds are raised and lowered." The apparatus may be attached to any convenient form of plate, frame, or bracket; it is composed of a swivel piece, "which has a slightly preponderating weight behind its axis or stud," a cross bar "connecting the two sides" of the swivel piece, and a tumbler catch formed with a recess and turning on a fulcrum stud on the swivel piece; there are ordinarily as many tumblers as cords. Each cord passes through a tumbler, over the cross bar and suitable guide pulleys, to the blind. The tension of the cord, when in action, holds the tumbler "at right angles, or nearly so, to a line drawn from the fulcrum stud of the swivel piece to the cross bar;" when the cord is released

the weight of the swivel piece "causes it to assume a diagonal "or horizontal position," and "the upward tension of the cord "acting on one side of the tumbler, causes the other side thereof "to bind the cord against the cross bar." Sometimes the swivel piece is made without a weight. There are several modifications, but without any change of principle, described; one which "may "be applied to prevent the loss of the submerged end of a "telegraph cable, in case of breakage during the process of "paying out."

[Printed, *1s.* Drawings.]

A.D. 1866, August 3.—N^o 2009.

RITCHIE, CHARLES.—"Improvements in ships' furniture in "which a steady platform is required." A floating platform is placed in a tank; it is flat at top, "and underneath the flat top is "enclosed water-tight a space of sufficient capacity to enable the "platform to float with any weight which may come upon it." Sufficient water is poured into the tank "to keep the floating "platform at a distance of about six inches from the bottom." Macintosh fabric, put on very loosely, is attached to the edges of the platform and carried up and secured to the top edge of the tank. To prevent the platform from coming into collision with the sides of the tank, endless elastic bands are attached to the edge of the platform and carried over pulleys at the top and bottom of the tank. To aid persons in placing themselves on a "couch which rests on such a platform, bolts are provided "by "which for a time the platform may be held to the tank so as to "move with it." For a table, a standard, on which the table top is mounted, rises from the middle of the platform. Sometimes the plank and platform are suspended "by a ball-and-socket joint "from a centre above."

[Printed, *4d.* No Drawings.]

A.D. 1866, August 17.—N^o 2118.

JOHNSON, JOHN HENRY. — (*A communication from Henry Almansor Alden.*)—"An improved stuffing for mattresses, chair "seats, and other like purposes." The substance employed is sponge; it is taken "in its raw state," cut up into very small particles, thoroughly cleansed by repeated washings, submitted to the action of muriatic acid, and dried. To increase its "elasticity,

"suppleness, and softness," it is soaked in equal parts of glycerine or an equivalent and water, and then "pressed with moderate power so as to retain in its cells a small amount of the liquor."

[Printed, 4d. No Drawings.]

A.D. 1866, August 23.—N° 2162.

NEWBOLD, THOMAS WILLIAM HILL.—(*Provisional protection only*).—"Improvements in the manufacture of cornices, cornice pole ends, curtain bands, and curtain pins." The blanks from which the ornaments are to be made are cut out from flat sheet metal; after chasing or otherwise ornamenting their surface, they are bent into the required form by hand or by hand tools, and the several parts are screwed together. The ornaments are attached to the articles by screws.

[Printed, 4d. No Drawings.]

A.D. 1866, September 12.—N° 2343.

BRIGHT, JAMES PRATT.—"An improvement or improvements in manufacturing, decorating, and ornamenting articles of furniture." This invention consists in the employment of slabs or panels of "porcelain, earthenware, slate, glass, iron, tin, zinc, rice, bone, and ivory," ornamented with designs in colour or otherwise, in various articles of furniture. In a dressing glass, for instance, a slab of either is inserted in the frame which supports the standards. In a pier glass or in a picture frame, panels of either are placed in apertures formed in the frame.

[Printed, 6d. Drawing.]

A.D. 1866, September 18.—N° 2391.

BAILEY, WILLIAM HENRY.—(*Provisional protection only*).—"A combined bath, travelling trunk, and self-rocking cradle." This combined article consists of a bath made by preference of sheet metal, a sliding or hinged lid, lugs at the sides for straps, and rockers of wood, metal, or other material, having projections which fit into the lugs. "Or the bath may have small pegs or lugs projecting from the ends near the top, and be arranged to swing in standards." To make the cradle self-rocking it is connected by a rod to mechanism "arranged to hang on the wall, consisting of a crank or other similar motion and toothed wheelwork, to which motion is imparted by a weight or spring."

[Printed, 4d. No Drawings.]

A.D. 1866, September 20.—N° 2412.

CHADBURN, CHARLES HENRY.—(*Provisional protection only.*)

—"Improvements in moveable door screens." Screens fitted to doors according to this invention "are drawn or partially drawn "on the opening of the door;" and in several modifications "the "curtain is spread out when the door is closed and is folded to "the back of the door when open." A curtain is suspended on two horizontal rods jointed together, and jointed one to the post or lintel, the other to the door "on the back upper corner near "the outer edge." It is suspended by rings or buttons "in such "a manner that the curtain may cover the entire opening, or be "drawn together on either rod by means of a cord," or the curtain itself "may be only fitted to one of the rods." Modifications:—

1. Where it is not desirable to attach a curtain rod to the door three rods are used jointed together, "but in place of fastening "the same to the door it is fastened to the lintel or post to which "the back of the door is hung, and a guide is used to connect the "upper corner of the back of the door with the horizontal swivel-
"ling rod which is attached to the lintel or post."
2. A stationary rod may be used, "which springs from the post or lintel of the "door and passes in an horizontal direction forming a radius with "the door, or of any other form which is beyond the radius, say, "at a right angle from the wall a given distance, and then bent "round in a curve, and thence in a direction, say, parallel with "the wall." This rod, if not strong enough to carry the curtain, may be supported by a horizontal branch rod, and the curtain "is "opened and closed by the action of the door by an arm attached to the upper corner of the door;" or this arm "may be used as "a support for the curtain rod." In some cases "it may be of "advantage to suspend the curtain on a cord, one end of which is "attached at the back of the door to a short arm on the upper "corner and near the outer edge thereof, and the outer end of the "cord is passed over a pulley and attached to a weight;" or a spring barrel may be used to take up and let off the cord.
3. Where it is desired "to remove the curtain beyond a right line, "an horizontal radial arm, jointed in any convenient position "above the door and attached at its outer end to the top of "the curtain or to the cord, by an eye or other suitable attachment, may be used; or two or more radial arms may be "used in the same way." Or the cord may be dispensed with "by using a series of the radial arms for suspending and

“ carrying the upper edge of the curtain.” In this modification the radial arms are jointed on to a vertical rod, which “ fits through a loop and rests upon a loop or other ready-made socket attached to the post behind the door;” the arms “ may be of sufficient strength to carry the curtain, or may be light and be supported from the outer ends by means of cords or chains to the top of the vertical rod;” the cords may be covered to form a tent-like appearance. 4. The curtain may be carried by “ a series of horizontal radial arms or flat blades, resembling those of a fan,” and working on an axis “ vertical with the axis of the hinges of the door,” and “ covering the opening between the door and the ceiling;” the rigidity of the fan blades may be increased by turning one of the longitudinal edges a little upwards, and the other in the opposite direction, or by corrugating them in the direction of their length. “ In place of attaching the actuating arm to the surface of the door it may be fitted into a socket formed in the top of the door in such a manner that the top of the inner end of the arm will be flush with the top thereof.” 5. A curtain “ to form a screen from draughts when the door is closed ” may be drawn up “ by means of a cord attached thereto and passed over a pulley at the back of the door near the top and attached to the lintel.”

[Printed, 4*l*. No Drawings.]

A.D. 1866, October 3.—N^o 2533.

OETZMANN, JOHN.—“ Improvements in the construction of “ mattresses,” namely, in combining a spring mattress with one of wool or horsehair. The spring frame is constructed in the usual manner, but for convenience sake in two or more parts either entirely separate or hinged together. The springs are covered on the top with canvas, a stuffing of wool or hair being placed between if preferred. An ordinary mattress is put on the top of the spring frame and secured thereto by straps and buckles or other fastenings.

[Printed, 4*l*. No Drawings.]

A.D. 1866, October 8.—N^o 2592. (* *)

BETJEMANN, GEORGE, BETJEMANN, GEORGE WILLIAM, and BETJEMANN, JOHN.—(*Provisional protection refused.*)—“ Improvements in the manufacture of articles commonly called

“ ‘ writing ’ or ‘ library sets,’ and other similar articles.” The patentees propose to apply “ slabs of polished stone or marble “ mounted with mediæval or other ornamental mounts ” to the covers and other parts of sets, desks, caskets, albums, dressing cases, and like articles. The slabs are to be fixed “ to a suitable “ foundation, forming the body of the article by cement, marine “ glue, pins, ornamental nails, or screws and nuts.” Similar mounts may be applied “ when the body of such articles consists “ entirely of stone or marble.” If cement or glue is to be employed, “ the parts coming in contact with each other ” are to be roughened ; if pins, nails, or screws, “ they are attached to the “ back of the metal mounts, and passed through the slab of stone “ into and through the material forming the foundation for the “ stone or marble, and are then secured by rivetting or by nuts.” Or “ the mounts may be formed with nuts at the back thereof ” for the reception of screws.

[Printed, 4d. No Drawings.]

A.D. 1866, October 9.—N° 2613.

PITT, GEORGE.—“ Improvements in uniting and securing together or ornamenting certain parts of metal bedsteads and “ other furniture in metal, and also in the formation of screens, “ grilles, and metal railing.” The parts to be united or ornamented are first tinned or coated with solder and then laid between moulds into which soft metal is run : the boss thus produced is enriched by a covering of brass or other superior metal in the shape of castings or stampings. “ Some forms of junction require no mould, the joints or knuckles themselves forming the “ mould into which the soft metal may be run.”

[Printed, 4d. No Drawings.]

A.D. 1866, October 15.—N° 2662.

WRIGHT, JOHN.—(*Provisional protection refused.*)—“ Improvements in ornamenting bedsteads.” The proposed improvements consist in encasing the pillars and legs with cylindrical covers made either wholly or in part of glass.

[Printed, 4d. No Drawings.]

A.D. 1866, October 20.—N° 2715.

DIXON, GEORGE.—(*Provisional protection only.*)—“ Improvements in fringes, tassels, and such like upholsterers’

" mings." These articles are ornamented by placing on their strands "a tube or tubes, which may be constructed of reed, paper, cardboard, or such other light, hollow material, and which are covered with silk or thread of any colour or length." By varying the material and colour "patterns or ornamental designs may be worked." The tubes "are made to slide upon the strands so that their exact position may be obtained;" they may be ornamented with colored paper, or tinsel, or gold leaf, instead of with silk or thread.

[Printed, 4d. No Drawings.]

A.D. 1866, November 3.—N^o 2853.

NORTH, EDWARD PARSONS.—"A new or improved portable or folding reading desk, stand, or easel." The pillar is either tubular or solid; if tubular the bottom is made capable of sliding on a square or angular rod affixed to the foot. The support consists of two rods jointed to each other at their middle, so that the one which extends sideways can be folded parallel to the other. One end of the other rod is united to the foot in such a manner that the support may be placed on either side of the pillar; the other end is jointed to a stay whose top is connected to the pillar by a sliding socket. At the upper portion of the pillar is an arm sliding on it by means of a socket, and the arm carries a desk made in two halves jointed together and attached to the arm by a sliding socket and plate. The arm is jointed to its socket and can be fixed at any angle by a wedge which is "situated behind the central knuckle" of the joint, and which works in an opening in the socket by means of a rod and coiled spring. The desk socket slides on the arm and clips it by aid of "a nearly tubular spring" (covered with leather), which is placed inside it. The plate which unites the desk to its socket turns freely on a pivot or centre at the back of the socket. Each socket has its fixing screw. The folding support may be replaced by a fixed base; or the bottom of the pillar may be bent at right angles and enter a socket underneath a chair. To make a double reading desk two arms are employed; the pillar is telescopic; the socket of one arm slides on the upper, that of the other on the lower tube; and the inner end of the lower arm is more curved than that of the upper. A table can be formed by depressing the upper tube until the two desks are in the same plane.

[Printed, 8d. Drawing.]

A.D. 1866, November 3.—N° 2860.

PHILLIPSON, WILLIAM FRANCES. — (*Provisional protection refused.*) — “Improvements in the manufacture of bedsteads.” The frame, the pillars, and the joints are to be made of cast iron or other metal. Wood, “in the form of panels or otherwise,” is to be fastened to the frame to form the sides and head and foot boards. By such a combination “a more highly ornamental effect and a more substantial appearance” are produced.

[Printed, 4d. No Drawings.]

A.D. 1866, November 6.—N° 2877.

NEWTON, WILLIAM EDWARD. — (*A communication from Jules Antoine Pelosse.*) — “Improvements in poles or rods for curtains and hangings.” On the surface of the curtain rod are formed two helical grooves, each starting from the middle and running in opposite directions. The two curtain rings nearest the middle carry each a pin, which enters a groove and runs along it as the rod is caused to rotate by means of a band at either end; or wire may be wound round a curtain rod, so as to form two helices in opposite directions, “and terminated at the extremities by a “number of closer helices made sufficiently large to contain the “rings when the curtain is drawn back;” in this arrangement the rings are all furnished with pins. Or a curtain rod may be constructed “of two bands or flat pieces of iron rolled in “the form of two helices in opposite directions, but not joined “round a mandril, but soldered together at their extremities.”

[Printed, 8d. Drawing.]

A.D. 1866, November 7.—N° 2885.

HUXLEY, EDWARD. — (*Provisional protection only.*) — “The “improved manufacture of coverlets, rugs, quilts, or covers for “beds & certain articles of wearing apparel, & as a stuffing for “cushions and pillows.” It is proposed to employ a new material, “commonly called moc-main, or silk cotton,” by enclosing a layer or layers thereof between outer coverings of any suitable woven fabric or fabrics; and in some cases by uniting the whole into sheets or pieces by stitching or quilting,

" a new combination of materials being thus produced, possessing the essential qualities of warmth and lightness."

[Printed, 4d. No Drawings.]

A.D. 1866, November 9.—N° 2920.

WOODROFFE, SOLOMON WILLIAM. — "Improvements in the construction of privies, dust-holes, commodes, water-closets, ash-pits, and tank covers, and for other similar purposes." Under each side of a seat or cover bearings are fixed, each pair carrying an axle to which a flap is secured; the edges of the flaps are provided with flexible india-rubber tubing or an equivalent; they are kept closed by a spring on each axle; and a ring of felt or other suitable substance is fastened to the under edge of the orifice made by the opening of the flaps. Each axle carries also a short arm connected by a link to a lever whose fulcrum is on a bracket secured to the seat; the other end of each lever is hinged to a rod which passes up through the seat and supports an upper seat hinged to the seat below it; pressure upon the upper seat depresses it, forces down the rods, and causes the flaps "to fall away from beneath the orifice." There is a receptacle underneath, which receives at each rise of the rods a quantity of disinfecting or other fluid supplied from two tanks; in the lower one is a valve plug, which shuts when the orifice opens and opens when the orifice shuts; in the upper one is a valve plug, which opens and shuts with the orifice; this action is obtained by means of wires or chains and pulleys.

[Printed, 10d. Drawing.]

A.D. 1866, November 12.—N° 2969.

CADMAN, JOHN RICHARD. — "Improved means of forming joints between sashes, doors, drawers, and other structures, and the frames in which they move or are fitted." On the inside of the bottom rail or frame, in which a sash or other structure is fitted, a dovetail or other shaped groove is cut; a tube or cushion of india-rubber or other yielding or elastic substance is placed in the groove, and a bead of metal, ebony, wood, or other hard material is glued or otherwise secured to the tube. The bead projects, "but can be forced in, owing to the elasticity of the tube." In the sash is a groove corresponding to the bead. In structures which open (as distinguished from such as slide) the

edge which first meets the bead is rounded. The position of the tube, bead, and grooves may be reversed.

[Printed, 8d. Drawing.]

A.D. 1866, November 13.—N° 2964.

BRIERLEY, LEONARD.—"Improvements in metallic bedsteads, "cots, and couches." The frame is made of cylindrical bars or tubing; one side and the end rails are attached to the pillars with dovetail joints; the other side, which is a slotted tube, is capable of rotating in tubular sockets on the pillars. The sacking is connected to the fixed side and end rails by hems through which they are passed, and to the slotted tube by passing through it a rod, "to which the edge of the sacking is attached by a small "hem." Near the ends of this tube are nuts which are turned by spanners; on its middle are a ratchet wheel and a bearing (in which the tube can turn) carrying a pawl. A stretcher is hooked at one end to the fixed side rail; its opposite end takes into a hole in the bottom of the bearing.

[Printed, 8d. Drawing.]

A.D. 1866, November 13.—N° 2974.

BROWN, JULIA PARRIS.—"Improvements in bedsteads, and in "their application in apartments." A recess is to be formed "in the upper part or in and above the ceiling of an apartment" for the reception of a bedstead, which is suspended by cords or chains, one at each corner. The cords pass over pulleys in the ceiling or upper part and have appended to their ends weights, which, with the cords, "may be arranged so as to run in channels "at or near the corners or other proper parts of the apartment." The lower surface of the bedstead may be paneled or ornamented.

[Printed, 6d. Drawing.]

A.D. 1866, November 22.—N° 3074.

STIDOLPH, GEORGE FREDERICK, STIDOLPH, JOHN, and MORLEY, JOSEPH ROBERTS.—"Improvements in shop fittings, "applicable also to book shelves and other articles of furniture." In a window frame, or in a recess, or upon standards, four polygonal pulleys are mounted round which endless chains pass; the

chains "are made with flat links connected together by pins " passing transversely through them, and the distance from centre " to centre corresponds with the length of one side of the polygon " pulleys." Shelves or trays are jointed at each end to the chains by some of the centre pins, which are made longer than the others for the purpose. "Suitable locking instruments are provided for " holding the shelves in any position." Sometimes three sets of pulleys are employed "so as to lead the chains or bands in a " triangular path." Similarly writing tables may be made with moveable pigeon holes. Sometimes the chains are arranged to travel horizontally; they are connected at top and bottom with uprights, between which the shelves or pigeon holes are placed.

[Printed, 10d. Drawing.]

A.D. 1866, November 28.—No 3129.

TIMMINS, HENRY.—"Improvements in furniture springs and " in machinery to be employed in the manufacture of furniture " springs." The springs are double conical springs; the improvements relate to the last coil at top and bottom, and consist in connecting the ends thereof to the adjacent coil by bringing them into the same plane and twisting the extreme ends "so as to form " as nearly as possible a continuous ring around the said coil " and at right angles to it." By this method of manufacture " the base and summit of the spring have a flat bearing, and " bear firmly against the surface between which the spring is " placed." The machine in which the connecting ring or loop is produced is minutely described; the principal parts are, a bed plate having a portion cut away to receive a steel plate, a stud (on the steel plate) round which the wire is bent, a slot in the bed plate through which the wire passes, a slide catch to hold the wire tight, an adjustable stop to hold the wire tight, a lever "moving " in a vertical plane" and bending down the wire upon the steel plate, and a lever "turning in a horizontal plane" and carrying a pressing roller which bends the wire round the stud "into a loop " or the figure of a nearly complete circle." The machine is worked by means of a treadle. The loop is closed upon the adjacent coil by means of an ordinary press.

[Printed, 1s. 4d. Drawings.]

A.D. 1866, November 28.—N° 3135.

HOWARD, GEORGE.—“An improved manufacture of elastic “seat.” A spring seat is made in the usual manner; on the canvas cover thereof is secured a sufficiently thick coating of horsehair or other elastic stuffing; over this is applied a case formed with cells or transverse or longitudinal divisions, and having the cells stuffed with feathers or down. “The back cushion “and the pads for the arms are also constructed in a cellular “manner.” The invention may be adapted “to couches, sofas, “and other seats besides chairs.”

[Printed, 8d. Drawing.]

A.D. 1866, December 14.—N° 3290.

WOODS, ARTHUR.—“An improved hammock cot, and means “for suspending the same.” The cot, named by the patentee “the reversible hammock cot,” is made of canvas or other flexible woven fabric, “of an oblong form, with vertical or nearly “vertical sides and jib ends, the latter being fitted with thimbles.” Removeable stretchers are placed in pockets or loops at each end to keep the bottom distended; and ropes are sewn or otherwise fastened along the whole of the upper edge. A rigid frame may be made to fit inside. The cot is suspended “by two ropes or “lanyards connected directly to the berth and overhead to the “deck,” but the patentee prefers a suspender of rope for each end of the cot; one suspender has a hook at one extremity and a thimble at the other; the other suspender is fitted at one end with a thimble; the free end is “rove through the other jib end “and tied so as to leave that end of the hammock cot at any “selected distance from the deck.” This cot can be used “in “camp and elsewhere.”

[Printed, 8d. Drawing.]

A.D. 1866, December 21.—N° 3366.

ALLIX, GEORGE.—“Improvements in apparatus for raising and “lowering window blinds, windows, maps, and other articles, and “retaining them in any required position.” The blind or other article is raised and lowered by means of a chain secured to a pin on the end of the roller. The pin turns in a bracket carried

from a plate screwed to the window frame. On the bracket is an eye through which the chain descends; below is a bracket or cleat; on the upper portion is a pulley, behind which the chain passes, and in the lower portion "a slit or cut is made to catch or nip the chain." "The circumference of the pulley is, say, half an inch nearer the window frame than the slit." Sometimes there is fitted to the lower bracket a lever, by lifting which the chain is moved out of the slit. The lower apparatus may be replaced (1) by a plate which carries two double lugs, each having a pulley fitted in it; the lower lug is a little longer than the upper and has in it the slit to catch the chain; (2) by a plate carrying two eyes, the upper one plain and "as close as possible to the frame," the lower one not quite so close and formed with the slit; or (3) by a screw eye bolt having either a short or long shoulder; in the former case, the slit is in the part of the eye farthest from the frame; in the latter, in the part nearest to it. The invention can be applied to Venetian blinds by connecting the cords which pass through apertures in the laths to the roller before mentioned; and to windows by fastening the upper end of the chain to the sash and carrying the chain thence over pulleys to one of the apparatuses.

[Printed, 8d. Drawing.]

A.D. 1866, December 19.—N^o 3338.

SIMPSON, MICHAEL HODGE.—"Improvements in apparatus for the prevention of sea-sickness." By aid of this invention "the traveller may connect his body as rigidly as possible with the ship." The apparatus may be constructed in the form of either a chair, a sofa, or a sofa-bed, and it is "securely fixed to any part of the ship." The first (a folding chair) has two arms, one of which may be fixed, whilst the other is capable of a lateral motion; this motion is allowed by connecting the ends of the arm "to slides sliding in grooves or guides formed from end to end of two wooden rails forming part of the chair, and to which the slides may be fixed by binding screws," or by other means. At the top of the chair-back is a head rest, which, "independently of its vertical adjustment," may also "run along a groove formed in the top rail of the back." The traveller,

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“ having settled himself as comfortably as possible by placing the cushions so that the arms of the chair support him by the arm-pits without hurting his shoulders or impeding his breathing,” should advance the moveable arm towards the fixed one, “ so that both arms shall press against his body,” and hold it “ as rigidly as possible,” and then turn the set screws. The way in which the other parts of the chair are put together is not described, but two figures in the drawings “ represent two back views,” in which the chair is resting on the front legs and on the ends of the two arms,” to enable the traveller to “ vary his position when he is sufficiently accustomed to the motion of the ship;” in one a board (to form a seat) is “ fastened to the bottom of the back of the chair.” The arms are furnished with fixed handles, and other handles are attached to the back legs or other part of the seat;” the traveller by holding these can “ resist with more certainty the effect of large waves.” Modifications :—the arms may be straight or curved, and stuffed like other parts of the chair; coverings, waterproof, and an adjustable footboard may be added. The method of adjusting and securing the moveable arm may be varied; both arms may be moveable; and “ the height of the upper ends of the rods may be adapted to the height of the traveller.” The sofa contains several seats constructed on the same principle; “ the space between the moveable arm of one seat and the fixed arm of the next is sufficient for the slides and set screws.” The sofa-bed has two side boards (one moveable) abutting against the sides of the frame; the abutments of the moveable board “ are in two parts and provided with grooves, slides, and set screws, so that the moveable board may be pressed against the body of the traveller to hold it firm; straps may also be fixed to either of the two boards.” A head rest similar to that of the chair, “ fitted with a soft cushion, may be fixed to the sofa or bed.” The moveable parts of either chair, sofa, or bed “ may carry a system of rods provided at one end with a crank and gearing within reach of the hand of the traveller, and at the other end with a pinion working in a rack fixed to the frame,” or means may be provided for adjusting separately the position of the ends of the moveable piece.

[Printed, 8d. Drawings.]

A.D. 1866, December 21.—N^o 3370.

BROWNE, BENJAMIN.—(*A communication from Robert Clegg.*)—(*Provisional protection refused.*) — “Improvements in the construction of camp or folding bedsteads.” The sides are composed of round pieces of wood in three parts joined by metal hinges; the sacking is sewn to the side pieces. Each hinge is made of two pieces of malleable cast iron, into one of which is fastened a piece of flat metal having a slot therein. Through the slot passes a pin fixed across one end of a short metal tube; the other end carries a round piece of wood; these pieces form the legs and act as stretchers to the sacking. The legs cross, “and around each of the crossing parts thereof is fixed a short tube of metal; in one of which and midway of its length is fixed a T-shaped piece of metal, which is intended to take and lock into a corresponding shaped recess formed in the tube which is upon the other leg.” The legs at the head are longer than the others, for the purpose of raising the sacking so that it may serve as a pillow.

[Printed, 4d. No Drawings.]

APPENDIX.

A.D. 1802, October 30.—N° 2653.

THOELDEN, AUGUSTUS FREDERICK.—“Mechanical apparatus for supporting the human body, or any part thereof, more especially during the time of repose, and for other beneficial purposes.” The patentee describes, 1, his method of suspending “a receptacle in which the human body or any part thereof may be placed,” and which he calls “the bed;” 2, an invalid bedstead convertible into an easy chair; 3, a suspension frame for broken or diseased limbs. 1. The bed is suspended from the ceiling, or from the top framing of a bedstead, or from a frame made for the purpose; and that it may be “moved, placed, or swung in all directions,” a spring of any convenient figure (or a number of springs) is interposed between it and the hook or centre of suspension. At or near the hook is fixed a pulley, through which a cord is passed, having one end attached to the bed, and the other at liberty to be drawn by the occupant or an assistant. To “prevent the extreme motion, and render it impossible for the spring to fail or give way,” a rope, wire, metallic rod, or other fit piece is fastened to the bed and to the hook. In every part of the apparatus in which cords and pulleys are used, the patentee employs “compound tackles of the usual forms,” if convenient or necessary. The spring (the suspending of which he describes) is bow-shaped. 2. The patentee does not lay claim to any particular shape of bedstead, nor to relating or confining “the side motions” thereof; he proposes “that four cords should severally proceed from the corners of the bedstead to the lower part of the spring suspension,” and the bedstead should be adjustable to any height by pulleys, cog wheels, “or other contrivances for lengthening or shortening the effective part of the said cords.” Within the frame of the bedstead he places two frames, “one of which is capable of being raised up by hinges, so as to raise a suitable part of the bed together with the patient,” and of serving as the back of an easy chair, whilst the other can be lowered by hinges (an

part of the bedding), and permit the patient's legs "to acquire "more or less of a vertical position, at the same time that they "are conveniently supported by a footboard." The raising and lowering can be readily managed "by means of a simple pulley "and cord to each end, with or without a tackle, and forming a "communication between the said moveable frames and the "superior part of the said bed, at or near its place of suspension "by the spring." The bedding "may be disposed above or "below the ticking," which may have a hole cut in it for convenience sake. 3. To the lower part of the spring is secured a pulley, ring, or loop, through which a cord is passed "to support "the two ends of a board which constitutes part of the bed or "receptacle for the limb." One end of the cord is fastened to one of two loops "which pass respectively thro' two holes at "each end of the said board;" the other end "is provided with "a number of eyes," into which a hook from the other loop can be inserted, and so "lengthen or shorten the whole effective part" of the cord. "A flexible receptacle for the leg or limb, made of "cloth, leather, or any other fit material, with a piece or stump "of the same to form a rest for the sole of the foot," is suspended longitudinally beneath the board; and by means of strings (at the edges of the cloth), which pass upwards over the edges of the board and are wound round pegs in the middle of the same, the cloth can be applied "more or less firmly" against the different parts of the limb. The cloth may consist of several pieces, so that a part of the limb may be uncovered if required. This method of suspension may be applied to cradles, sofas, chairs, and other seats.

[Printed, *ad.* No Drawings. See Repertory of Arts, vol. 2 (*second series*), p. 104.]

A.D. 1809, December 5.—N^o 3283. (* *)

WARE, GEORGE.—"An improved apparatus and machinery for "the support and exercise of the human frame, and for the prevention of bodily deformity." This consists of a raised platform, with side frames and pillars of wood "placed in an angle at least "of forty-five degrees," secured at the back part of the platform; two back boards slide up and down in grooves inserted in the pillars of the side frames. "At the back of the lower board is "affixed two wooden sliding bars, which pass into grooves cut "into the centre of the upper board, the bars to be confined with

" screws, so that the upper board may be raised and lowered as occasion may require." A small moveable seat is attached to the lower back board, " the seat is to place the lower part of the human body upon, to force down the backboard to work the springs below them." These springs have at their upper part an iron bar, and they pass through a hole in the floor of the platform, and are fixed to an iron bar secured in the under part of the platform. There is a front board " for the knees of the person exercising to press against to put it in motion," framed to two pillars which " pass through two channels cut on each side of the front part of the floor of the platform, and work at the lower part upon the ends of a strong elliptic spring which is secured to the under part of the platform in the centre." To the spring is affixed a regulating and gathering screw and frame of iron. The front board has four metal castors. Strong hooks are fixed to " widen or shorten the distance between the front and back boards;" in the inside of the front board are wooden stocks for the feet. There are arm springs keyed through the side frames at the back of the platform, to which are hung lines or ropes for the use of the hands and arms. " At the upper part of the back board " is a support for the head.

[Printed, 6d. Drawing. Rolls Chapel Reports, 7th Report, p. 206.]

A.D. 1846, March 25.—N^o 11,149.

SMITH, CHARLES.—"Improvements in cooking and culinary utensils, and methods of heating and suspending or fastening articles of domestic use and similar purposes." Among the articles to the invention of which the patentee lays claim are the following:—1, "a slop pail, night stool, wash-hand stand, and jug, with the vessels to contain the soap, &c., and a pole or horse to receive the towel, combined in one apparatus." A "hermetically secured casing" contains a slop pail and pan, a wooden rim, and a seat of cloth; the cover either is made in two parts, and a basin with a discharge plug is placed therein, or itself forms a basin and a water jug with a tap. In the cover of the jug there are compartments for soap, &c., and on the top a rod serving as a towel horse. The apparatus is made of tin, zinc, or other suitable material. 2, a portable foot warmer; it consists of a metal box filled "with particles of pumice stone or other sandy matter," and it is provided with a sliding handle and a hinge.

flap. When heated over an ordinary fire, it is placed in a similarly shaped "clean tin or other metal envelope," and is then in a fit state for use. 3, a combined brazier, umbrella stand, and clothes-horse; a metal stand is constructed with holes and tray and a recess for the reception of a "metal conical formed vessel," which opens by a hinged joint and is held together by a "sliding ferrule and handle." The vessel is filled with "any kind of hot liquid," or the above-named "comminuted materials," heated and then placed in the recess, and on it is put a perforated cover, the upper part of which is arranged "for hanging damp or other cloathing or similar articles." 4, poles for suspending curtains and other articles. If the pole is of metal, it is hollow and has cut in it a longitudinal slot along which slide balls or buttons with shanks and hooks or eyes; if it is of wood, it is made in two parts; a longitudinal aperture and slot are grooved out of each, and the two are then glued and pinned together. Or the interior of the pole may be made with flanges "for forming a path or railway for rollers or wheels or axles bearing in frames to travel in, with shanks and suitable apparatus thereto;" this arrangement admits of modifications which are described.

[Printed, 3s. 6d. Drawings. See London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 356.]

A.D. 1848, December 21.—N^o 12,385.

FONTAINEMOREAU, PIERRE ARMAND LE COMTE DE.—(*A communication*).—"Hygienic apparatus and processes for preventing and curing chronical and other affections, and to prevent or stop certain epidemic diseases." The part of the apparatus which brings this invention within the range of the present series has "the form of a bed, sofa, or couch, for affording relief, repose, and heat to afflicted and other persons." It consists of a bed or couch frame, "an elastic mattress entirely metallic," and a bottom, "made into compartments constructed of sheet iron or zinc." The mattress is fitted with spiral springs "of tinned or galvanized brass or iron," and having each "an upper and lower surface;" the upper "is fixed to the spring and on the four sides by metallic hooks also tinned or galvanized;" the lower is "set on an assemblage of iron bands which form the bottom of the mattress," and it is united with

the springs and bands by similar hooks. "The lower part of the bottom of the frame of the mattress is composed of four iron bars," and the upper part is formed by a rod "on which is attached the upper extremity of the lateral springs" by much stronger but shorter hooks; "the bars and rods are united laterally by supports." This mattress "is set hermetically on the bottom with compartments fixed on each side in a rabbet about one inch deep made in the frame of bedstead, couch, or sofa." The bottom is of sheet iron or zinc. "The two internal bands" which separate the compartments are provided "with two holes opening at discretion for the egress of the heat," and "in the lateral parts there are on one side three small holes" for the same purpose. "On the other side there are three slide doors" for the introduction of lamps with spirits of wine; these are placed "between two tin plates supported by four metallic rods." An opening in the mattress and a suitable funnel lead to a night convenience in the middle compartment.

[Printed, 1s. Drawings. See London Journal (*Newton's*), vol. 39 (*conjoined series*), p. 153; *Mechanics Magazine*, vol. 54, p. 476; *Patent Journal*, vol. 11, p. 122.]

A.D. 1853, January 20.—N^o 143.

DE MANARA, HORACE.—(*Provisional protection only*).—"Apparatus and arrangements applicable to steamboats and other navigable vessels, for the purpose of preventing sea-sickness." This invention is carried out by aid of balloons attached to seats. The socket of a ball and socket joint is "firmly connected to the bottom of the boat or vessel," and a platform carrying seats is connected to the ball. Bars of iron are "securely fixed by their lower ends to the platform," their upper ends being fixed to a strong ring of metal." The balloon is surrounded by a "strong band of silk or other suitable material," and the band has attached to it rings "through which cords are passed as also through holes in the ring." A strong curved bar is secured to the sides of the vessel "and is passed through a curved slotted piece of metal which moves upon a grooved pulley;" the pulley is attached to a piece which slides upon the bar. On the bar are collars "against which pieces of metal abut occasionally," and to these pieces "elastic cords are attached by one end and by their other end to the curved piece." When the vessel is pitching or rolling, the cords (which may be readily adjusted as found

necessary) "will offer resistance thereto," preserve the vertical position of the balloon, and prevent the seats from partaking of the motion of the vessel. The platform and seats may be surrounded and covered in with glass or canvas.

[Printed, 10d. Drawings.]

A.D. 1854, May 30.—N^o 1199.

WERTHEIMBER, LEOPOLD.—"Improvements in apparatus "for preventing sea-sickness." Among the various contrivances for this purpose invented by the patentee are three which claim admittance into the present series. The first is a moveable platform to which "chairs or couches may be attached by rods or "other suitable means." A cylinder is fitted in any convenient part of the ship, "the induction passages of which "communicate with pipes carried to the boiler, and a platform is secured to the upper end of the piston rod of the cylinder. "Steam is admitted "to the cylinder by a four-way cock, which may be opened and "shut by a self-acting contrivance, so that, when the ship sinks "into the trough of the sea, steam is admitted beneath the "piston, and the platform is caused to rise; on the contrary, "when the vessel rises over the crest of the wave, steam is "admitted above the piston and the platform descends." Thus a motion "opposite to that of the vessel is obtained." Another arrangement "consists of three cylinders, one placed forward and "two at the after part, connected with each other by pipes." The second "consists of a platform or chair, &c., which is supported by a bracket attached to an upright shaft; this shaft "passes through a hollow standard." The upper part of the shaft carries a rack in which gears a pinion fitted with a handle, and "a rising and falling motion is given to the platform by "moving the handle to and fro." Or the platform may be moved "by a perpendicular shaft or lever attached to a pinion "gearing with a toothed rack." The third is effected "by interposing elastic bodies between the person and the deck. A support "may be constructed of two pieces or plates of wood or "other material held together by springs," thereby giving a considerable degree of elasticity to the upper plate. Such supports "may be applied so as to give great elasticity to spring "mattresses, chairs, or couches," but "the upper part must be

"held to the lower only by the springs and not fastened at the corners."

[Printed, 4d. No Drawings.]

A.D. 1854, December 7.—N° 2577. (* *)

METCALFE, THOMAS. — (*Provisional protection only.*)—"An improved construction of bath chair." The chair is an invalid one, "suitable for out of door use," and capable "of being folded up;" it "also admits of being used as a couch or bedstead." It consists "mainly of two skeleton frames jointed together, after the manner of the ordinary folding chair, and similarly provided with jointed arms." These frames are mounted "on wheels, which may be removed at pleasure to allow of castors being applied to the axles of the wheels." Frames are jointed to the back and front, to which to secure a canopy; also for carrying a footboard.

[Printed, 4d. No Drawings.]

A.D. 1855, March 16.—N° 593. (* *)

WREN, JOHN WALTER CAWLEY. — (*Provisional protection only.*)—"An improved construction of invalid bed." This consists in "attaching to the ordinary bedstead frame a rectangular frame of a corresponding size, which carries a loose sacking, and is provided with a suitable opening to admit of the application of the pan." This frame is attached "to the bedstead by two or more pairs of parallel levers, jointed to the sides of the frames." The levers at the foot end of the bed extend downwards, and are connected together by a cross bar, "which serves as a treadle to raise the sacking frame."

[Printed, 4d. No Drawings.]

A.D. 1855, April 19.—N° 875. (* *)

JOHNSON, JOHN HENRY. — (*A communication.*)—"Improvements in the manufacture of articles of hard india-rubber or gutta percha, or compounds thereof, and in coating or covering articles with the like materials."

Among numerous articles proposed to be made of the above materials "rollers or castors for furniture to run upon," "ornaments for furniture," &c., "picture and other frames, knobs for doors and furniture," are enumerated.

Respecting the preparation of the materials and the mode of moulding reference is made to the Specifications of T. Hancock, A.D. 1843, N° 9952; T. Hancock, A.D. 1846, N° 11,135; C. Hancock, A.D. 1846, N° 11,032; Brockeden and Hancock, A.D. 1846, N° 11,455; W. Johnson, A.D. 1854, N° 1819; J. H. Johnson, A.D. 1854, N° 752; J. H. Johnson, A.D. 1855, N° 506; and J. H. Johnson, A.D. 1855, N° 855. The articles are first moulded when in a soft state, and then submitted to a high degree of heat in steam heaters, or to the action of a sulphur bath. "In some cases it is proposed to form the article of this compound in a plastic state, and then submit it to the action of heat after being removed from the mould, or the article may be submitted to the heating process while still in the mould. During the process of vulcanizing, the article may be embedded in magnesia, which is preferable to soapstone or plaster, since these materials bleach the articles during the process . . . whilst the magnesia allows them to come out of the mould quite black."

[Printed, 4th. No Drawings.]

A.D. 1862, July 15.—N° 2035.

GHISLIN, THOMAS GOULSTON.—"Improvements in the treatment or preparation of British and foreign algæ, and the application of the same to various branches of the arts and manufactures." The seaweed "should be first steeped in dilute sulphuric acid for about three hours," and be then dried so as to become hard, "after which it is to be ground up or reduced to an almost impalpable powder." A strong glutinous solution is to be prepared by well mixing and boiling together ten per cent. of glue dissolved in water, five per cent. of gutta percha and two and a half per cent. of india-rubber dissolved in naphtha or other suitable solvent of these gums, and ten per cent. of coal tar. Five per cent. of sulphur, five per cent. of resin, two and a half per cent. of alum, and say sixty per cent of the seaweed (all in a dry and pulverised state) are to be "carefully and intimately" mixed in the boiling compound; and "when the ingredients have been well incorporated the mass must be submitted to heat in a suitable oven, taking care that the mixture be not heated above three hundred degrees Fahrenheit." The mass will then be brought into a plastic state, and may be moulded, embossed, pressed, stamped, or otherwise formed into any desired shape,

“ and thereby adapted, when it becomes hard, for various useful “ or ornamental purposes.” A cheaper article is produced by mixing fifteen per cent. of glue dissolved in water with fifteen per cent. of heated coal tar, and intimately incorporating therewith seventy per cent. of the pulverised seaweed; the compound is to be baked as above mentioned, the heat not exceeding three hundred degrees. “ This substance, when cold and dry, will “ become hard, and will form a good and cheap substitute for “ ebony.” A surface resembling ivory may be obtained by boiling the substance “ in a solution composed of caustic lime and “ water,” “ and afterwards steeping it ” in dilute sulphurous acid for several hours or “ even days ; ” it may then be “ submitted to “ chlorine gas or chloride of lime ” until it becomes bleached, and it may be necessary “ to repeat the process more than once.” If thin flat sheets with a surface resembling ivory be required, “ they may also be produced from any of the tubular algæ or “ seaweeds by splitting up the tubes and then cleaning and pre- “ paring their surfaces so that they may be used for the intended “ purpose when properly bleached.” The surface of the prepared material may be coated with metal by the “ electro-galvanic pro- “ cess,” or it may be colored or otherwise ornamented; in the former case, however, it “ must be prepared by being coated with “ plumbago or other material which will render the surface a “ conductor of electricity.” Again, boiling “ in a solution of “ sulphuric acid,” or steeping “ in a dilute solution of chloride of “ zinc,” and then washing “ in a dilute cold solution of sul- “ phuric acid,” will harden the surfaces and bodies of some of the before-named substances. Such substances the patentee proposes to call “ laminite or laminarian stag horn,” adding that “ they may be cut, shaped, pressed, carved, or bent into various “ shapes so that they may be used for most of the purposes for “ which horn of various kinds has heretofore been used in the “ arts, and also for many purposes for which hard woods and “ substances, such as ebony and ivory, have been employed.”

[Printed, 4d. No Drawings.]

A.D. 1862, November 10.—Nº 3034.

GHISLIN, THOMAS GOULSTON.—“ Improvements in the tre “ ment of certain foreign plants, and in the application of “ fibres derived therefrom.” The plants (South Africa “ their families and species, are “ oxalidæ, hibiscus, and c

"malvaceæ, virgilia, bryonia, gnaphalium, ficoideæ, salicornia, "euphorbiaceæ, urticæ, ficus, proteaceæ, cycadeæ, phoenix "reclinata; indeæ, including *Watsonia humilis* and others; gladiolus, antholyza lapyrousia, barbiana, witsenia, tritonia, and sparaxis; juncaceæ, serratus, and trista; various restiaceæ, "cyperaceæ, and gramineæ; holcus saccharatus, maize, and "stipa." The "leaves, fronds, or stalks" are steeped in a weak solution of alkali and afterwards in a weak solution of sulphuric acid; or they may be boiled in alkali and then be steeped in a cold solution of sulphuric acid; the fibres are separated from the sheaths or cuticles by friction, washed well in cold water and left to dry, when they may "be applied to such purposes as hemp, "flax, cocoa fibres, hair, and whalebone, have hitherto been "employed for." The fibres of the trista and the web leaf of the juncus serratus are applicable to "stuffing purposes;" the former is cut "some inches from the root;" the long stalk is boiled with soap or alkali until softened, and the fibres are opened out by suitable friction and afterwards washed and curled. The fibres of the trista "may be woven into a cloth suitable for "covering furniture in lieu of hair cloth." The web leaf is cut into strips and curled.

[Printed, 4d. No Drawings.]

A.D. 1863, August 7.—N° 1953. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Henry Giffard.*)—"Improvements in apparatus for preventing sea "sickness." These are, "the general construction, arrangement, "and combination of apparatus to be applied to sea-going ships "and vessels substantially" as follows, employing "a supporting platform or cradle suspended by means of springs some "distance above the deck to allow for the vertical movement of "the ship, the springs allowing for the pitching of the ship without imparting motion to the suspended platform; these suspensory springs are secured to the masts or to special supports. "Other springs disposed horizontally or nearly so, and attached "to the sides of the platform and to the masts or other suitable "fixed points, serve to prevent any oscillating motion of the platform during the rolling of the ship. The platform may be "either suspended above the deck line, in which case a flight of "steps and a gangway also supported by springs are required to

" gain access to the platform ; or the floor of the platform may
" be level with the deck, a well or cavity being made in the deck
" beneath the same to allow of vertical play. These suspended
" platforms may be roofed in or left open, and provided with
" seats, beds, and other conveniences for voyagers."

[Printed, 8d. Drawing.]

A.D. 1864, April 28.—N° 1072. (* *)

GHISLIN, THOMAS GOULSTON.—" Improvements in the treatment and application of seaweed." The patentee employs any of the common kinds of seaweed, and, having treated them in the manner described in the Specification, No. 2035, A.D. 1862, dries them and reduces them to an impalpable powder, or, if operated upon when wet, makes them into a paste. The powder or paste is incorporated with the following ingredients or some of them, and in proportions according to the articles to be manufactured ; gums, gum resins, including india-rubber, gutta percha, and substances of that class, resins natural or artificial, bituminous substances and the products of the same, paraffin and oily or fatty substances, fibrous materials, the silicates of potash and soda, pulverized chalk, talc, and other earthy matters, metallic oxides, gelatine, farina, alum, tungstic acid, powdered charcoal, and other analogous substances. He states the particular ingredients and the proportions which he prefers, according as he requires tenacity, elasticity, solidity, or durability. He mixes and incorporates the mass in a masticator provided with rollers or other mechanism, and then passes it between cylinders. He enumerates the various purposes for which this "algæite" is available ; amongst them are "articles of furniture." The compound may be hardened and rendered impermeable to water "by steeping it in boiled oil, or in any drying oil, or in a solution of gum or resin, or in any kind of varnish."

[Printed, 4d. No Drawings.]

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